

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM022080

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on page 28. Well Name and No.
TOMB RAIDER 1-12 FED 334H9. API Well No.
30-015-44940-00-X110. Field and Pool or Exploratory Area
LIVINGSTON RIDGE11. County or Parish, State
EDDY COUNTY, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: LINDA GOOD

Email: linda.good@dvn.com

3a. Address

6488 SEVEN RIVERS HIGHWAY
ARTESIA, NM 88211

3b. Phone No. (include area code)

Ph: 405.552.6558

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 1 T23S R31E NENE 360FNL 1070FEL
32.339725 N Lat, 103.726418 W Lon**Carlsbad Field Office
OCD Artesia****12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Improperly Abandoned	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	SEE ATTACHED FOR CONDITIONS OF APPROVAL	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy respectfully requests to amend the following items on the original APD for the Tomb Raider 1-12 Fed Com 334H:

1. Change TVD for target interval from 11,250 to 11,529 (revised directional plan attached)
2. Change surface casing shoe from 715' MD to 750' MD
3. Amend hole size in primary casing design / make shoe intermediate casing shoe deeper
4. Add contingency casing design
5. Add contingency cement options for intermediate casing string(s)
6. Update Other Facets of Operation section to include option to walk rig / batch drill

Spec sheet for proposed 8-5/8" casing is attached.

RECEIVED**MAY 31 2018****Accepted for record - NMOC****DISTRICT II-ARTESIA O.C.D.**

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #421779 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY, sent to the Carlsbad
Committed to AFMSS for processing by ZOTA STEVENS on 05/30/2018 (18ZS0122SE)

Name (Printed/Typed) LINDA GOOD

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 05/30/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USEApproved By ZOTA STEVENSTitle PETROLEUM ENGINEERDate 05/30/2018

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Carlsbad

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Devon Energy, Tomb Raider 1-12 Fed 334H

1. Geologic Formations

TVD of target	11,529	Pilot hole depth	N/A
MD at TD:	21,471	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	698		
Salado	1162		
Base of Salt/Delaware	4558		
Cherry Canyon	5431		
Lower Brushy	8082		
1st BSPG Lime	8359		
1st BSPG Sand	9458		
2nd BSPG Sand	10023		
3rd BSPG Sand	11230		
Wolfcamp	11660		

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

Devon Energy, Tomb Raider 1-12 Fed 334H

2. Casing Program (3-String Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn
	From	To				
17.5"	0	750'	13.375"	54.5	J-55	BTC
10.625"	0	10,000'	8.625"	32	L80HC	BTC
7.875"	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 8-5/8" 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, setting depth with be revised accordingly if needed.
- A variance is requested to wave the centralizer requirement for the 10-5/8" casing and 5-1/2" casing.

Casing Program (3-String Alternate Design)

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	4,500'	9.625"	40	J-55	BTC
	4,500'	10,000'	9.625"	40	P-110EC	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.
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.

Devon Energy, Tomb Raider 1-12 Fed 334H

	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 334H

3. Cementing Program (3-String Primary Design)

Casing	# Sk	TOC	Wt. (lb/gal)	H ₂ O (gal/sk)	Yld (ft ³ /sack)	Slurry Description
Surface	615	Surf	14.8	6.33	1.33	Lead: Class C Cement + additives
Int	937	Surf	9	20.6	3.31	Lead: Class C Cement + additives
	130	2000' above shoe	14.8	6.42	1.33	Tail: Class H / C + additives
Int Two Stage (DV @ ~6000' MD)	374	Surf	9	20.6	3.31	1 st stage Lead: Class C Cement + additives
	130	500' above shoe	14.8	6.42	1.33	1 st stage Tail: Class H / C + additives
	562	Surf	9	20.6	3.31	2 nd stage Lead: Class C Cement + additives
	130	500' above DV	14.8	6.42	1.33	2 nd stage Tail: Class H / C + additives
Int Squeeze	As needed	Surf	14.8	6.32	1.33	Squeeze Lead: Class C Cement + additives
	937	Surf	9	20.6	3.31	Lead: Class C Cement + additives
	130	2000' above shoe	13.2	5.31	1.6	Tail: Class H / C + additives
Production	1807	2000' tieback	13.2	5.31	1.6	Lead: Class H / C + additives

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

Casing String	% Excess
Surface	50%
Intermediate	50%
Intermediate (Two Stage)	25%
Production	10%

Devon Energy, Tomb Raider 1-12 Fed 334H

Cementing Program (3-String Alternate Design)

Casing	# Sks	TOC	Wt. (lb/gal)	H ₂ O (gal/sk)	Yld (ft ³ /sack)	Slurry Description
Surface	615	Surf	14.8	6.33	1.33	Lead: Class C Cement + additives
Int	1324	Surf	9	20.6	3.31	Lead: Class C Cement + additives
	187	2000' above shoe	14.8	6.42	1.33	Tail: Class H / C + additives
Int Two Stage (DV @ ~6000' MD)	553	Surf	9	20.6	3.31	1 st stage Lead: Class C Cement + additives
	187	500' above shoe	14.8	6.42	1.33	1 st stage Tail: Class H / C + additives
	830	Surf	9	20.6	3.31	2 nd stage Lead: Class C Cement + additives
	187	500' above DV	14.8	6.42	1.33	2 nd stage Tail: Class H / C + additives
Int Squeeze	As needed	Surf	14.8	6.32	1.33	Squeeze Lead: Class C Cement + additives
	1324	Surf	9	20.6	3.31	Lead: Class C Cement + additives
	187	2000' above shoe	14.8	6.42	1.33	Tail: Class H / C + additives
Production	2522	200' tieback	13.2	5.31	1.6	Lead: Class H / C + additives

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

Casing String	% Excess
Surface	50%
Intermediate	50%
Intermediate (Two Stage)	25%
Production	10%

4. Pressure Control Equipment

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

5. Mud Program

6. Depth		Type	Weight (ppg)	Vis	Water Loss
From	To				
0	750'	FW Gel	8.4-8.6	28-34	N/C
750'	10,000'	DBE / Cut Brine	8.6 - 9.3	28-34	N/C
10,000'	TD	OBM / WBM	9.0 - 10	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
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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 10 ¾" 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



U. S. Steel Tubular Products

5/4/2018 9:23:38 AM

8.625" 32.00lbs/ft (0.352" Wall) L80 HC

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	80,000	--	--	--	psi
Maximum Yield Strength	95,000	--	--	--	psi
Minimum Tensile Strength	95,000	--	--	--	psi
DIMENSIONS	Pipe	BTC	LTC	STC	
Outside Diameter	8.625	--	--	--	in.
Wall Thickness	0.352	--	--	--	in.
Inside Diameter	7.921	--	--	--	in.
Standard Drift	7.796	7.796	--	--	in.
Alternate Drift	7.875	7.875	--	--	in.
Nominal Linear Weight, T&C	32.00	--	--	--	lbs/ft
Plain End Weight	31.13	--	--	--	lbs/ft
PERFORMANCE	Pipe	BTC	LTC	STC	
Minimum Collapse Pressure	3,820	3,820	--	--	psi
Minimum Internal Yield Pressure	5,710	5,710	--	--	psi
Minimum Pipe Body Yield Strength	732	--	--	--	1,000 lbs
Joint Strength	--	--	--	--	1,000 lbs
Reference Length	--	--	--	--	ft
MAKE-UP DATA	Pipe	BTC	LTC	STC	
Make-Up Loss	--	--	--	--	in.
Minimum Make-Up Torque	--	--	--	--	ft-lbs
Maximum Make-Up Torque	--	--	--	--	ft-lbs

Legal Notice

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U. S. Steel Tubular Products
 460 Wildwood Forest Drive Suite 300S
 Spring, Texas 77360
 1-877-895-9461
 connections@uss.com
 www.usstubular.com

Devon Energy

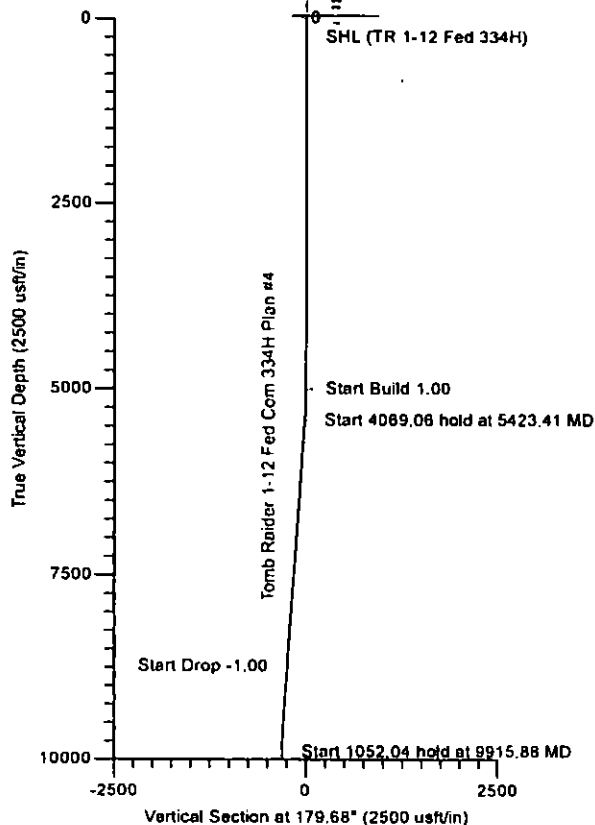
Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed Com
 Well: Tomb Raider 1-12 Fed Com 334H
 Wellbore: OH
 Design: Plan #4
 3474' GE + 25' KB @ 3499.00usft
 Ground Level: 3480.60



Azimuths to Grid North
 True North: -0.33°
 Magnetic North: 6.62°
 Magnetic Field
 Strength: 48138.9nT
 Dip Angle: 60.13°
 Date: 3/7/2018
 Model: HDGM

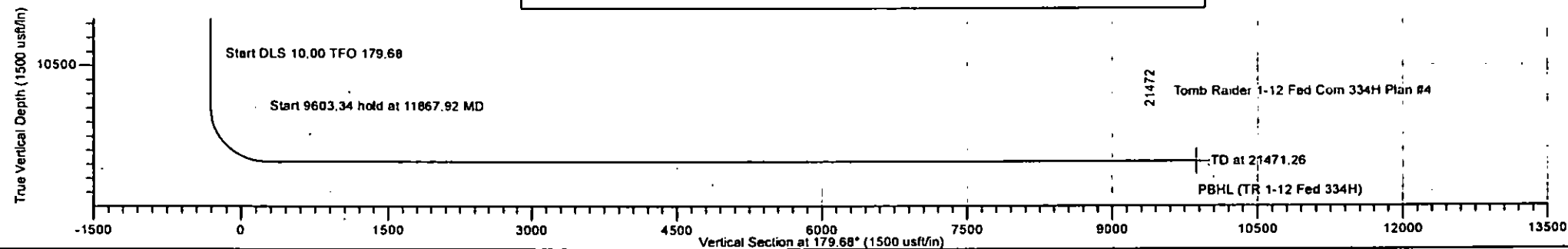
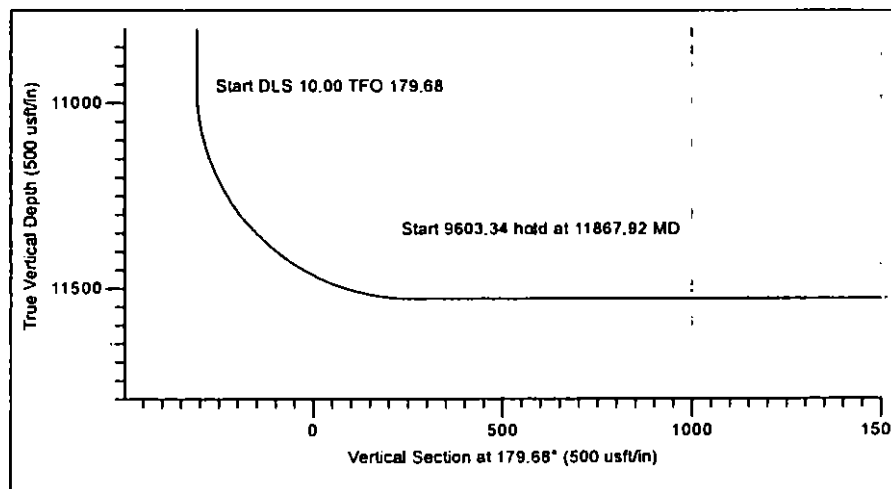
PROJECT DETAILS: Eddy County, NM (NAD-83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone



SECTION DETAILS									
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	
5423.41	4.23	20.84	5423.02	14.61	5.58	1.00	20.84	-14.58	
9492.47	4.23	20.84	9480.98	295.39	112.44	0.00	0.00	-294.75	
9915.88	0.00	0.00	9904.00	310.00	118.00	1.00	180.00	-309.34	
10967.92	0.00	0.00	10956.04	310.00	118.00	0.00	0.00	-309.34	
11867.92	90.00	179.68	11529.00	-262.95	121.21	10.00	179.68	263.62	
21471.26	90.00	179.68	11529.00	-9866.14	175.05	0.00	0.00	9866.96	

DESIGN TARGET DETAILS							
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
SHL	0.00	0.00	0.00	487854.70	728777.94	32° 20' 23.0068 N	103° 43' 35.1116 W
PBHL	11529.00	-9866.14	175.05	477988.58	728952.99	32° 18' 45.3681 N	103° 43' 33.7231 W



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #4 (Tomb Raider 1-12 Fed Com 334H/OH)
 Tomb Raider 1-12 Fed Com
 Created By: Dustin Autt
 Date: 10.05, April 17 2018
 Approved: _____
 Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed Com
 Well: Tomb Raider 1-12 Fed Com 334H
 Wellbore: OH
 Design: Plan #4

PROJECT DETAILS: Eddy County, NM (NAD-83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone



Azimuths to Grid North
 True North: -0.33°
 Magnetic North: 6.62°
 Magnetic Field
 Strength: 48138.9nT
 Dip Angle: 60.13°
 Date: 3/7/2018
 Model: HDGM

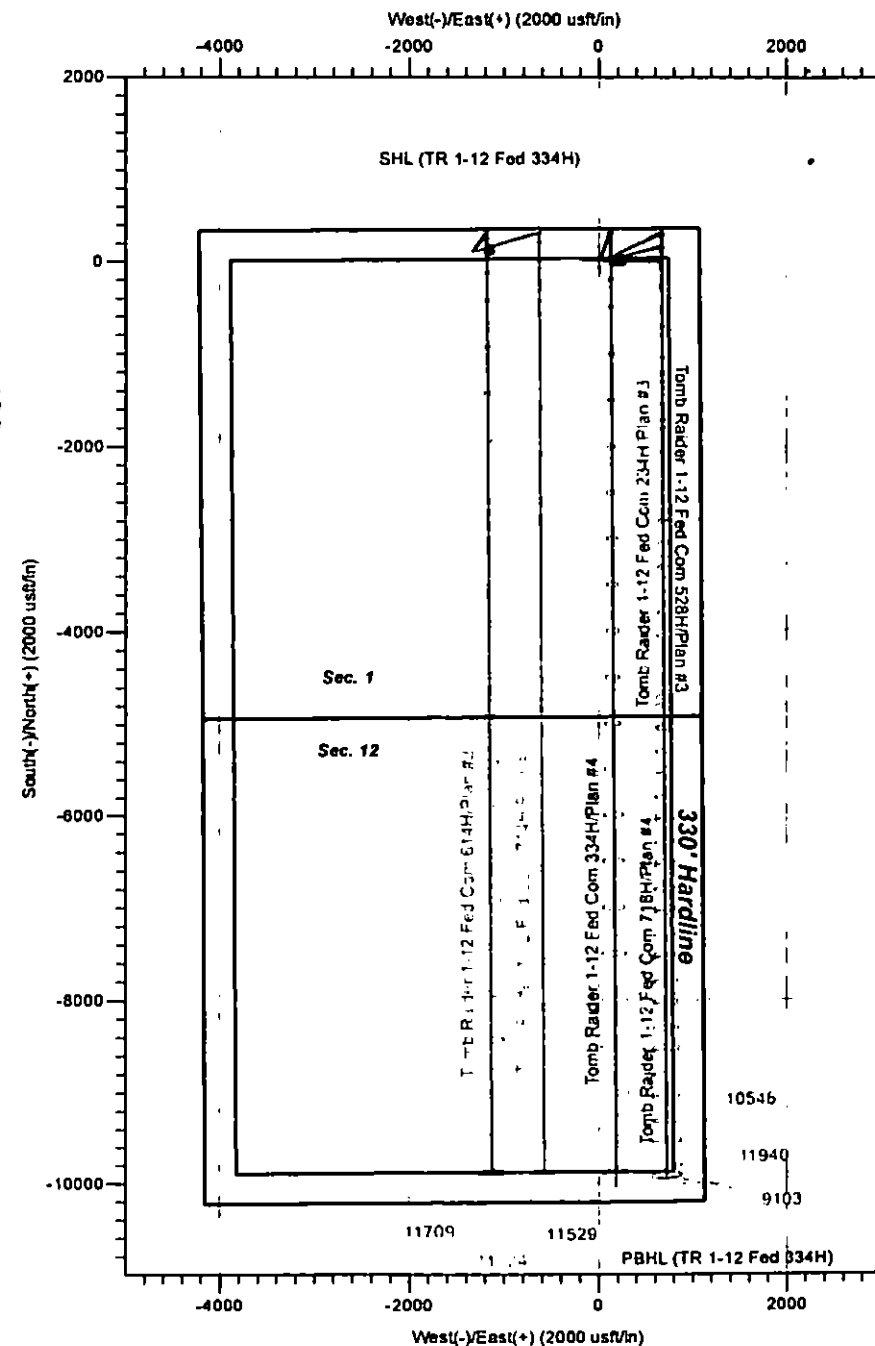
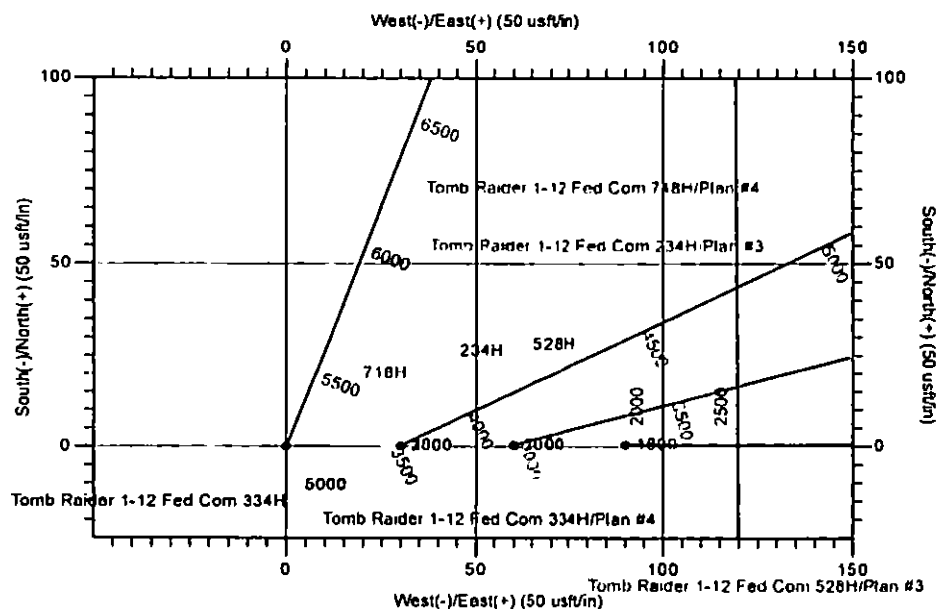


DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
PBHL	11529.00	-9866.14	175.05	477988.56	728952.99	32° 18' 45.3681 N	103° 43' 33.7231 W
SHL	0.00	0.00	0.00	487854.70	728777.84	32° 20' 23.0068 N	103° 43' 35.1116 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	
5423.41	4.23	20.84	5423.02	14.61	5.58	1.00	20.84	-14.58	
9492.47	4.23	20.84	9480.98	295.39	112.44	0.00	0.00	-294.75	
9915.88	0.00	0.00	9904.00	310.00	118.00	1.00	180.00	-309.34	
10967.92	0.00	0.00	10956.04	310.00	118.00	0.00	0.00	-309.34	
11867.92	90.00	179.68	11529.00	-262.95	121.21	10.00	179.68	263.62	
21471.28	90.00	179.68	11529.00	-9866.14	175.05	0.00	0.00	9866.98	



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #4 (Tomb Raider 1-12 Fed Com 334H/Plan #4)
 Created By: Dustin Ault
 Date: 10/12, April 17 2018
 Approved: _____ Date: _____

Devon Energy

Eddy County, NM (NAD-83)

Tomb Raider 1-12 Fed Com

Tomb Raider 1-12 Fed Com 334H

OH

Plan: Plan #4

Standard Planning Report

17 April, 2018

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Tomb Raider 1-12 Fed Com 334H
Company:	Devon Energy	TVD Reference:	3474' GE + 25' KB @ 3499.00usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3474' GE + 25' KB @ 3499.00usft
Site:	Tomb Raider 1-12 Fed Com	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed Com 334H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

Project	Eddy County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Tomb Raider 1-12 Fed Com			
Site Position:		Northing:	487,854.70 usft	Latitude:	32° 20' 23.0068 N
From:	Map	Easting:	728,777.94 usft	Longitude:	103° 43' 35.1116 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	Tomb Raider 1-12 Fed Com 334H					
Well Position	+N/-S	0.00 usft	Northing:	487,854.70 usft	Latitude:	32° 20' 23.0068 N
	+E/-W	0.00 usft	Easting:	728,777.94 usft	Longitude:	103° 43' 35.1116 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,480.60 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/7/2018	6.95	60.13	48,139

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.68

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,423.41	4.23	20.84	5,423.02	14.61	5.56	1.00	1.00	0.00	20.84	
9,492.47	4.23	20.84	9,480.98	285.39	112.44	0.00	0.00	0.00	0.00	
9,915.88	0.00	0.00	9,904.00	310.00	118.00	1.00	-1.00	0.00	180.00	
10,967.92	0.00	0.00	10,956.04	310.00	118.00	0.00	0.00	0.00	0.00	
11,867.92	90.00	179.68	11,529.00	-262.95	121.21	10.00	10.00	19.96	179.68	
21,471.26	90.00	179.68	11,529.00	-9,866.14	175.05	0.00	0.00	0.00	0.00	PBHL (TR 1-12 Fed 3

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed Com
 Well: Tomb Raider 1-12 Fed Com 334H
 Wellbore: OH
 Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (TR 1-12 Fed 334H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	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
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	1.00	20.84	5,100.00	0.82	0.31	-0.81	1.00	1.00	0.00
5,200.00	2.00	20.84	5,199.96	3.26	1.24	-3.25	1.00	1.00	0.00

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed Com
 Well: Tomb Raider 1-12 Fed Com 334H
 Wellbore: OH
 Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	3.00	20.84	5,299.86	7.34	2.79	-7.32	1.00	1.00	0.00
5,400.00	4.00	20.84	5,399.68	13.04	4.97	-13.02	1.00	1.00	0.00
5,423.41	4.23	20.84	5,423.02	14.61	5.58	-14.58	1.00	1.00	0.00
5,500.00	4.23	20.84	5,499.41	19.90	7.57	-19.86	0.00	0.00	0.00
5,600.00	4.23	20.84	5,599.13	26.80	10.20	-26.74	0.00	0.00	0.00
5,700.00	4.23	20.84	5,698.86	33.70	12.83	-33.63	0.00	0.00	0.00
5,800.00	4.23	20.84	5,798.59	40.80	15.45	-40.51	0.00	0.00	0.00
5,900.00	4.23	20.84	5,898.31	47.50	18.08	-47.40	0.00	0.00	0.00
6,000.00	4.23	20.84	5,998.04	54.40	20.71	-54.28	0.00	0.00	0.00
6,100.00	4.23	20.84	6,097.77	61.30	23.33	-61.17	0.00	0.00	0.00
6,200.00	4.23	20.84	6,197.50	68.20	25.96	-68.05	0.00	0.00	0.00
6,300.00	4.23	20.84	6,297.22	75.10	28.59	-74.94	0.00	0.00	0.00
6,400.00	4.23	20.84	6,396.95	82.00	31.21	-81.83	0.00	0.00	0.00
6,500.00	4.23	20.84	6,496.68	88.90	33.84	-88.71	0.00	0.00	0.00
6,600.00	4.23	20.84	6,596.40	95.80	36.47	-95.60	0.00	0.00	0.00
6,700.00	4.23	20.84	6,696.13	102.70	39.09	-102.48	0.00	0.00	0.00
6,800.00	4.23	20.84	6,795.86	109.60	41.72	-109.37	0.00	0.00	0.00
6,900.00	4.23	20.84	6,895.58	116.50	44.35	-116.25	0.00	0.00	0.00
7,000.00	4.23	20.84	6,995.31	123.40	46.97	-123.14	0.00	0.00	0.00
7,100.00	4.23	20.84	7,095.04	130.30	49.60	-130.02	0.00	0.00	0.00
7,200.00	4.23	20.84	7,194.77	137.20	52.23	-136.91	0.00	0.00	0.00
7,300.00	4.23	20.84	7,294.49	144.10	54.85	-143.79	0.00	0.00	0.00
7,400.00	4.23	20.84	7,394.22	151.00	57.48	-150.68	0.00	0.00	0.00
7,500.00	4.23	20.84	7,493.95	157.90	60.10	-157.56	0.00	0.00	0.00
7,600.00	4.23	20.84	7,593.67	164.80	62.73	-164.45	0.00	0.00	0.00
7,700.00	4.23	20.84	7,693.40	171.70	65.36	-171.33	0.00	0.00	0.00
7,800.00	4.23	20.84	7,793.13	178.60	67.98	-178.22	0.00	0.00	0.00
7,900.00	4.23	20.84	7,892.86	185.50	70.61	-185.11	0.00	0.00	0.00
8,000.00	4.23	20.84	7,992.58	192.40	73.24	-191.99	0.00	0.00	0.00
8,100.00	4.23	20.84	8,092.31	199.30	75.86	-198.88	0.00	0.00	0.00
8,200.00	4.23	20.84	8,192.04	206.20	78.49	-205.76	0.00	0.00	0.00
8,300.00	4.23	20.84	8,291.76	213.10	81.12	-212.65	0.00	0.00	0.00
8,400.00	4.23	20.84	8,391.49	220.00	83.74	-219.53	0.00	0.00	0.00
8,500.00	4.23	20.84	8,491.22	226.90	86.37	-226.42	0.00	0.00	0.00
8,600.00	4.23	20.84	8,590.95	233.80	89.00	-233.30	0.00	0.00	0.00
8,700.00	4.23	20.84	8,690.67	240.70	91.62	-240.19	0.00	0.00	0.00
8,800.00	4.23	20.84	8,790.40	247.60	94.25	-247.07	0.00	0.00	0.00
8,900.00	4.23	20.84	8,890.13	254.50	96.88	-253.96	0.00	0.00	0.00
9,000.00	4.23	20.84	8,989.85	261.40	99.50	-260.84	0.00	0.00	0.00
9,100.00	4.23	20.84	9,089.58	268.30	102.13	-267.73	0.00	0.00	0.00
9,200.00	4.23	20.84	9,189.31	275.20	104.76	-274.62	0.00	0.00	0.00
9,300.00	4.23	20.84	9,289.03	282.10	107.38	-281.50	0.00	0.00	0.00
9,400.00	4.23	20.84	9,388.76	289.01	110.01	-288.39	0.00	0.00	0.00
9,492.47	4.23	20.84	9,480.98	295.39	112.44	-294.75	0.00	0.00	0.00
9,500.00	4.16	20.84	9,488.49	295.90	112.63	-295.27	1.00	-1.00	0.00
9,600.00	3.16	20.84	9,588.28	301.86	114.90	-301.22	1.00	-1.00	0.00
9,700.00	2.16	20.84	9,688.18	306.20	116.55	-305.54	1.00	-1.00	0.00
9,800.00	1.16	20.84	9,788.13	308.90	117.58	-308.24	1.00	-1.00	0.00
9,900.00	0.16	20.84	9,888.12	309.98	117.99	-309.32	1.00	-1.00	0.00
9,915.88	0.00	0.00	9,904.00	310.00	118.00	-309.34	1.00	-1.00	0.00
10,000.00	0.00	0.00	9,988.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,100.00	0.00	0.00	10,088.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,200.00	0.00	0.00	10,188.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,300.00	0.00	0.00	10,288.12	310.00	118.00	-309.34	0.00	0.00	0.00

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Tomb Raider 1-12 Fed Com 334H
Company:	Devon Energy	TVD Reference:	3474' GE + 25' KB @ 3499.00usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3474' GE + 25' KB @ 3499.00usft
Site:	Tomb Raider 1-12 Fed Com	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed Com 334H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.00	0.00	0.00	10,388.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,500.00	0.00	0.00	10,488.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,600.00	0.00	0.00	10,588.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,700.00	0.00	0.00	10,688.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,800.00	0.00	0.00	10,788.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,900.00	0.00	0.00	10,888.12	310.00	118.00	-309.34	0.00	0.00	0.00
10,967.92	0.00	0.00	10,956.04	310.00	118.00	-309.34	0.00	0.00	0.00
11,000.00	3.21	179.68	10,988.11	309.10	118.01	-308.44	10.00	10.00	0.00
11,050.00	8.21	179.68	11,037.84	304.13	118.03	-303.47	10.00	10.00	0.00
11,100.00	13.21	179.68	11,086.96	294.84	118.08	-294.18	10.00	10.00	0.00
11,150.00	18.21	179.68	11,135.07	281.31	118.16	-280.65	10.00	10.00	0.00
11,200.00	23.21	179.68	11,181.83	263.64	118.26	-262.97	10.00	10.00	0.00
11,250.00	28.21	179.68	11,226.87	241.95	118.38	-241.29	10.00	10.00	0.00
11,300.00	33.21	179.68	11,269.84	216.43	118.52	-215.76	10.00	10.00	0.00
11,350.00	38.21	179.68	11,310.43	187.26	118.69	-186.59	10.00	10.00	0.00
11,400.00	43.21	179.68	11,348.32	154.66	118.87	-153.99	10.00	10.00	0.00
11,450.00	48.21	179.68	11,383.22	118.88	119.07	-118.21	10.00	10.00	0.00
11,500.00	53.21	179.68	11,414.88	80.19	119.29	-79.53	10.00	10.00	0.00
11,550.00	58.21	179.68	11,443.04	38.90	119.52	-38.23	10.00	10.00	0.00
11,600.00	63.21	179.68	11,467.49	-4.69	119.76	5.36	10.00	10.00	0.00
11,650.00	68.21	179.68	11,488.05	-50.25	120.02	50.92	10.00	10.00	0.00
11,700.00	73.21	179.68	11,504.57	-97.43	120.28	98.10	10.00	10.00	0.00
11,750.00	78.21	179.68	11,516.91	-145.87	120.56	146.54	10.00	10.00	0.00
11,800.00	83.21	179.68	11,524.98	-195.19	120.83	195.86	10.00	10.00	0.00
11,850.00	88.21	179.68	11,528.72	-245.04	121.11	245.71	10.00	10.00	0.00
11,867.92	90.00	179.68	11,529.00	-262.95	121.21	263.62	10.00	10.00	0.00
11,900.00	90.00	179.68	11,529.00	-295.03	121.39	295.71	0.00	0.00	0.00
12,000.00	90.00	179.68	11,529.00	-395.03	121.95	395.71	0.00	0.00	0.00
12,100.00	90.00	179.68	11,529.00	-495.03	122.51	495.71	0.00	0.00	0.00
12,200.00	90.00	179.68	11,529.00	-595.03	123.07	595.71	0.00	0.00	0.00
12,300.00	90.00	179.68	11,529.00	-695.03	123.63	695.71	0.00	0.00	0.00
12,400.00	90.00	179.68	11,529.00	-795.02	124.20	795.71	0.00	0.00	0.00
12,500.00	90.00	179.68	11,529.00	-895.02	124.76	895.71	0.00	0.00	0.00
12,600.00	90.00	179.68	11,529.00	-995.02	125.32	995.71	0.00	0.00	0.00
12,700.00	90.00	179.68	11,529.00	-1,095.02	125.88	1,095.71	0.00	0.00	0.00
12,800.00	90.00	179.68	11,529.00	-1,195.02	126.44	1,195.71	0.00	0.00	0.00
12,900.00	90.00	179.68	11,529.00	-1,295.02	127.00	1,295.71	0.00	0.00	0.00
13,000.00	90.00	179.68	11,529.00	-1,395.01	127.56	1,395.71	0.00	0.00	0.00
13,100.00	90.00	179.68	11,529.00	-1,495.01	128.12	1,495.71	0.00	0.00	0.00
13,200.00	90.00	179.68	11,529.00	-1,595.01	128.68	1,595.71	0.00	0.00	0.00
13,300.00	90.00	179.68	11,529.00	-1,695.01	129.24	1,695.71	0.00	0.00	0.00
13,400.00	90.00	179.68	11,529.00	-1,795.01	129.80	1,795.71	0.00	0.00	0.00
13,500.00	90.00	179.68	11,529.00	-1,895.01	130.36	1,895.71	0.00	0.00	0.00
13,600.00	90.00	179.68	11,529.00	-1,995.01	130.92	1,995.71	0.00	0.00	0.00
13,700.00	90.00	179.68	11,529.00	-2,095.00	131.48	2,095.71	0.00	0.00	0.00
13,800.00	90.00	179.68	11,529.00	-2,195.00	132.04	2,195.71	0.00	0.00	0.00
13,900.00	90.00	179.68	11,529.00	-2,295.00	132.60	2,295.71	0.00	0.00	0.00
14,000.00	90.00	179.68	11,529.00	-2,395.00	133.16	2,395.71	0.00	0.00	0.00
14,100.00	90.00	179.68	11,529.00	-2,495.00	133.73	2,495.71	0.00	0.00	0.00
14,200.00	90.00	179.68	11,529.00	-2,595.00	134.29	2,595.71	0.00	0.00	0.00
14,300.00	90.00	179.68	11,529.00	-2,694.99	134.85	2,695.71	0.00	0.00	0.00
14,400.00	90.00	179.68	11,529.00	-2,794.99	135.41	2,795.71	0.00	0.00	0.00
14,500.00	90.00	179.68	11,529.00	-2,894.99	135.97	2,895.71	0.00	0.00	0.00
14,600.00	90.00	179.68	11,529.00	-2,994.99	136.53	2,995.71	0.00	0.00	0.00

LEAM Drilling Services

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Tomb Raider 1-12 Fed Com 334H
Company:	Devon Energy	TVD Reference:	3474' GE + 25' KB @ 3499.00usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3474' GE + 25' KB @ 3499.00usft
Site:	Tomb Raider 1-12 Fed Com	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed Com 334H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,700.00	90.00	179.68	11,529.00	-3,094.99	137.09	3,095.71	0.00	0.00	0.00
14,800.00	90.00	179.68	11,529.00	-3,194.99	137.65	3,195.71	0.00	0.00	0.00
14,900.00	90.00	179.68	11,529.00	-3,294.99	138.21	3,295.71	0.00	0.00	0.00
15,000.00	90.00	179.68	11,529.00	-3,394.98	138.77	3,395.71	0.00	0.00	0.00
15,100.00	90.00	179.68	11,529.00	-3,494.98	139.33	3,495.71	0.00	0.00	0.00
15,200.00	90.00	179.68	11,529.00	-3,594.98	139.89	3,595.71	0.00	0.00	0.00
15,300.00	90.00	179.68	11,529.00	-3,694.98	140.45	3,695.71	0.00	0.00	0.00
15,400.00	90.00	179.68	11,529.00	-3,794.98	141.01	3,795.71	0.00	0.00	0.00
15,500.00	90.00	179.68	11,529.00	-3,894.98	141.57	3,895.71	0.00	0.00	0.00
15,600.00	90.00	179.68	11,529.00	-3,994.97	142.13	3,995.71	0.00	0.00	0.00
15,700.00	90.00	179.68	11,529.00	-4,094.97	142.70	4,095.71	0.00	0.00	0.00
15,800.00	90.00	179.68	11,529.00	-4,194.97	143.26	4,195.71	0.00	0.00	0.00
15,900.00	90.00	179.68	11,529.00	-4,294.97	143.82	4,295.71	0.00	0.00	0.00
16,000.00	90.00	179.68	11,529.00	-4,394.97	144.38	4,395.71	0.00	0.00	0.00
16,100.00	90.00	179.68	11,529.00	-4,494.97	144.94	4,495.71	0.00	0.00	0.00
16,200.00	90.00	179.68	11,529.00	-4,594.96	145.50	4,595.71	0.00	0.00	0.00
16,300.00	90.00	179.68	11,529.00	-4,694.96	146.06	4,695.71	0.00	0.00	0.00
16,400.00	90.00	179.68	11,529.00	-4,794.96	146.62	4,795.71	0.00	0.00	0.00
16,500.00	90.00	179.68	11,529.00	-4,894.96	147.18	4,895.71	0.00	0.00	0.00
16,600.00	90.00	179.68	11,529.00	-4,994.96	147.74	4,995.71	0.00	0.00	0.00
16,700.00	90.00	179.68	11,529.00	-5,094.96	148.30	5,095.71	0.00	0.00	0.00
16,800.00	90.00	179.68	11,529.00	-5,194.96	148.86	5,195.71	0.00	0.00	0.00
16,900.00	90.00	179.68	11,529.00	-5,294.95	149.42	5,295.71	0.00	0.00	0.00
17,000.00	90.00	179.68	11,529.00	-5,394.95	149.98	5,395.71	0.00	0.00	0.00
17,100.00	90.00	179.68	11,529.00	-5,494.95	150.54	5,495.71	0.00	0.00	0.00
17,200.00	90.00	179.68	11,529.00	-5,594.95	151.10	5,595.71	0.00	0.00	0.00
17,300.00	90.00	179.68	11,529.00	-5,694.95	151.67	5,695.71	0.00	0.00	0.00
17,400.00	90.00	179.68	11,529.00	-5,794.95	152.23	5,795.71	0.00	0.00	0.00
17,500.00	90.00	179.68	11,529.00	-5,894.94	152.79	5,895.71	0.00	0.00	0.00
17,600.00	90.00	179.68	11,529.00	-5,994.94	153.35	5,995.71	0.00	0.00	0.00
17,700.00	90.00	179.68	11,529.00	-6,094.94	153.91	6,095.71	0.00	0.00	0.00
17,800.00	90.00	179.68	11,529.00	-6,194.94	154.47	6,195.71	0.00	0.00	0.00
17,900.00	90.00	179.68	11,529.00	-6,294.94	155.03	6,295.71	0.00	0.00	0.00
18,000.00	90.00	179.68	11,529.00	-6,394.94	155.59	6,395.71	0.00	0.00	0.00
18,100.00	90.00	179.68	11,529.00	-6,494.93	156.15	6,495.71	0.00	0.00	0.00
18,200.00	90.00	179.68	11,529.00	-6,594.93	156.71	6,595.71	0.00	0.00	0.00
18,300.00	90.00	179.68	11,529.00	-6,694.93	157.27	6,695.71	0.00	0.00	0.00
18,400.00	90.00	179.68	11,529.00	-6,794.93	157.83	6,795.71	0.00	0.00	0.00
18,500.00	90.00	179.68	11,529.00	-6,894.93	158.39	6,895.71	0.00	0.00	0.00
18,600.00	90.00	179.68	11,529.00	-6,994.93	158.95	6,995.71	0.00	0.00	0.00
18,700.00	90.00	179.68	11,529.00	-7,094.93	159.51	7,095.71	0.00	0.00	0.00
18,800.00	90.00	179.68	11,529.00	-7,194.92	160.07	7,195.71	0.00	0.00	0.00
18,900.00	90.00	179.68	11,529.00	-7,294.92	160.64	7,295.71	0.00	0.00	0.00
19,000.00	90.00	179.68	11,529.00	-7,394.92	161.20	7,395.71	0.00	0.00	0.00
19,100.00	90.00	179.68	11,529.00	-7,494.92	161.76	7,495.71	0.00	0.00	0.00
19,200.00	90.00	179.68	11,529.00	-7,594.92	162.32	7,595.71	0.00	0.00	0.00
19,300.00	90.00	179.68	11,529.00	-7,694.92	162.88	7,695.71	0.00	0.00	0.00
19,400.00	90.00	179.68	11,529.00	-7,794.91	163.44	7,795.71	0.00	0.00	0.00
19,500.00	90.00	179.68	11,529.00	-7,894.91	164.00	7,895.71	0.00	0.00	0.00
19,600.00	90.00	179.68	11,529.00	-7,994.91	164.56	7,995.71	0.00	0.00	0.00
19,700.00	90.00	179.68	11,529.00	-8,094.91	165.12	8,095.71	0.00	0.00	0.00
19,800.00	90.00	179.68	11,529.00	-8,194.91	165.68	8,195.71	0.00	0.00	0.00
19,900.00	90.00	179.68	11,529.00	-8,294.91	166.24	8,295.71	0.00	0.00	0.00
20,000.00	90.00	179.68	11,529.00	-8,394.91	166.80	8,395.71	0.00	0.00	0.00

LEAM Drilling Services

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed Com
 Well: Tomb Raider 1-12 Fed Com 334H
 Wellbore: OH
 Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,100.00	90.00	179.68	11,529.00	-8,494.90	167.36	8,495.71	0.00	0.00	0.00
20,200.00	90.00	179.68	11,529.00	-8,594.90	167.92	8,595.71	0.00	0.00	0.00
20,300.00	90.00	179.68	11,529.00	-8,694.90	168.48	8,695.71	0.00	0.00	0.00
20,400.00	90.00	179.68	11,529.00	-8,794.90	169.04	8,795.71	0.00	0.00	0.00
20,500.00	90.00	179.68	11,529.00	-8,894.90	169.60	8,895.71	0.00	0.00	0.00
20,600.00	90.00	179.68	11,529.00	-8,994.90	170.17	8,995.71	0.00	0.00	0.00
20,700.00	90.00	179.68	11,529.00	-9,094.89	170.73	9,095.71	0.00	0.00	0.00
20,800.00	90.00	179.68	11,529.00	-9,194.89	171.29	9,195.71	0.00	0.00	0.00
20,900.00	90.00	179.68	11,529.00	-9,294.89	171.85	9,295.71	0.00	0.00	0.00
21,000.00	90.00	179.68	11,529.00	-9,394.89	172.41	9,395.71	0.00	0.00	0.00
21,100.00	90.00	179.68	11,529.00	-9,494.89	172.97	9,495.71	0.00	0.00	0.00
21,200.00	90.00	179.68	11,529.00	-9,594.89	173.53	9,595.71	0.00	0.00	0.00
21,300.00	90.00	179.68	11,529.00	-9,694.88	174.09	9,695.71	0.00	0.00	0.00
21,400.00	90.00	179.68	11,529.00	-9,794.88	174.65	9,795.71	0.00	0.00	0.00
21,471.26	90.00	179.68	11,529.00	-9,866.14	175.05	9,866.96	0.00	0.00	0.00
PBHL (TR 1-12 Fed 334H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (TR 1-12 Fed 334H - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	487,854.70	728,777.94	32° 20' 23.0068 N	103° 43' 35.1116 W
PBHL (TR 1-12 Fed 334 - plan hits target center - Point	0.00	0.00	11,529.00	-9,866.14	175.05	477,968.56	728,952.99	32° 18' 45.3681 N	103° 43' 33.7231 W

Devon Energy

Eddy County, NM (NAD-83)

Tomb Raider 1-12 Fed Com

Tomb Raider 1-12 Fed Com 334H

OH

Plan #4

Anticollision Report

17 April, 2018

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DISTRICT II-ARTESIA O.C.D.

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 1-12 Fed Com 334H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3474' GE + 25' KB @ 3499.00usft
Reference Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3474' GE + 25' KB @ 3499.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed Com 334H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Reference	Plan #4
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 2,000.00 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program		Date	4/17/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	21,471.24	Plan #4 (OH)	LEAM MWD+HDGM	MWD+HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Tomb Raider 1-12 Fed Com						
Tomb Raider 1-12 Fed Com 234H - OH - Plan #3	2,706.75	2,711.25	60.10	48.20	5.048	CC
Tomb Raider 1-12 Fed Com 234H - OH - Plan #3	2,800.00	2,803.95	60.35	48.03	4.900	ES
Tomb Raider 1-12 Fed Com 234H - OH - Plan #3	2,900.00	2,902.91	62.10	49.36	4.874	SF
Tomb Raider 1-12 Fed Com 528H - OH - Plan #3	1,915.13	1,919.53	90.10	81.75	10.794	CC
Tomb Raider 1-12 Fed Com 528H - OH - Plan #3	2,000.00	2,004.33	90.10	81.38	10.324	ES
Tomb Raider 1-12 Fed Com 528H - OH - Plan #3	2,200.00	2,201.15	93.69	84.12	9.785	SF
Tomb Raider 1-12 Fed Com 614H - OH - Plan #2	10,900.00	10,897.81	1,301.21	1,252.68	26.812	CC
Tomb Raider 1-12 Fed Com 614H - OH - Plan #2	21,472.24	21,652.47	1,311.93	983.90	3.999	ES, SF
Tomb Raider 1-12 Fed Com 714H - OH - Plan #3	10,900.00	10,921.44	749.27	700.57	15.386	CC
Tomb Raider 1-12 Fed Com 714H - OH - Plan #3	21,472.24	21,895.37	847.09	544.87	2.803	ES, SF
Tomb Raider 1-12 Fed Com 718H - OH - Plan #4	3,414.95	3,419.85	30.14	15.04	1.996	CC
Tomb Raider 1-12 Fed Com 718H - OH - Plan #4	3,500.00	3,504.88	30.14	14.66	1.947	ES, SF

Offset Design												
Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 234H - OH - Plan #3												
Survey Program: 0-LEAM MWD+HDGM												
Reference Offset Semi Major Axis Distance												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre - N-S (usft)	Offset Wellbore Centre - E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	4.50	4.50	0.00	0.00	89.66	0.36	60.10	60.10	59.91	0.19	320.040
100.00	100.00	104.50	104.50	0.09	0.10	89.66	0.36	60.10	60.10	59.91	0.19	320.040
200.00	200.00	204.50	204.50	0.32	0.32	89.66	0.36	60.10	60.10	59.46	0.64	94.302
300.00	300.00	304.50	304.50	0.54	0.55	89.66	0.36	60.10	60.10	59.01	1.09	55.298
400.00	400.00	404.50	404.50	0.77	0.77	89.66	0.36	60.10	60.10	58.56	1.54	39.118
500.00	500.00	504.50	504.50	0.99	1.00	89.66	0.36	60.10	60.10	58.12	1.99	30.264
600.00	600.00	604.50	604.50	1.22	1.22	89.66	0.36	60.10	60.10	57.67	2.44	24.678
700.00	700.00	704.50	704.50	1.44	1.44	89.66	0.36	60.10	60.10	57.22	2.88	20.832
800.00	800.00	804.50	804.50	1.67	1.67	89.66	0.36	60.10	60.10	56.77	3.33	18.024
900.00	900.00	904.50	904.50	1.89	1.89	89.66	0.36	60.10	60.10	56.32	3.78	15.883
1,000.00	1,000.00	1,004.50	1,004.50	2.11	2.12	89.66	0.36	60.10	60.10	55.87	4.23	14.196
1,100.00	1,100.00	1,104.50	1,104.50	2.34	2.34	89.66	0.36	60.10	60.10	55.42	4.68	12.834
1,200.00	1,200.00	1,204.50	1,204.50	2.56	2.57	89.66	0.36	60.10	60.10	54.97	5.13	11.710
1,300.00	1,300.00	1,304.50	1,304.50	2.79	2.79	89.66	0.36	60.10	60.10	54.52	5.58	10.767
1,400.00	1,400.00	1,404.50	1,404.50	3.01	3.02	89.66	0.36	60.10	60.10	54.07	6.03	9.964
1,500.00	1,500.00	1,504.50	1,504.50	3.24	3.24	89.66	0.36	60.10	60.10	53.62	6.48	9.273

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 234H - OH - Plan #3													Offset Site Error: 0.00 ush
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 ush
Reference		Offset		Serial Major Axis		Highside Toolface (°)	Distance				Separation Factor	Warning	
Measured Depth (ush)	Vertical Depth (ush)	Measured Depth (ush)	Vertical Depth (ush)	Reference (ush)	Offset (ush)		Offset Wellbore Centre +N-S (ush)	Offset Wellbore Centre +E-W (ush)	Between Centres (ush)	Between Ellipses (ush)			Minimum Separation (ush)
1,600.00	1,600.00	1,604.50	1,604.50	3.48	3.47	89.66	0.36	60.10	60.10	53.17	6.93	8.672	
1,700.00	1,700.00	1,704.50	1,704.50	3.69	3.69	89.66	0.36	60.10	60.10	52.72	7.38	8.143	
1,800.00	1,800.00	1,804.50	1,804.50	3.91	3.92	89.66	0.36	60.10	60.10	52.27	7.83	7.676	
1,900.00	1,900.00	1,904.50	1,904.50	4.14	4.14	89.66	0.36	60.10	60.10	51.82	8.28	7.259	
2,000.00	2,000.00	2,004.50	2,004.50	4.36	4.37	89.66	0.36	60.10	60.10	51.37	8.73	6.885	
2,100.00	2,100.00	2,104.50	2,104.50	4.59	4.59	89.66	0.36	60.10	60.10	50.92	9.18	6.548	
2,200.00	2,200.00	2,204.50	2,204.50	4.81	4.82	89.66	0.36	60.10	60.10	50.47	9.63	6.242	
2,300.00	2,300.00	2,304.50	2,304.50	5.04	5.04	89.66	0.36	60.10	60.10	50.02	10.08	5.964	
2,400.00	2,400.00	2,404.50	2,404.50	5.26	5.27	89.66	0.36	60.10	60.10	49.57	10.53	5.709	
2,500.00	2,500.00	2,504.50	2,504.50	5.49	5.49	89.66	0.36	60.10	60.10	49.12	10.98	5.475	
2,600.00	2,600.00	2,604.50	2,604.50	5.71	5.72	89.66	0.36	60.10	60.10	48.68	11.43	5.260	
2,700.00	2,700.00	2,704.50	2,704.50	5.94	5.94	89.66	0.36	60.10	60.10	48.23	11.88	5.061	
2,706.75	2,706.75	2,711.25	2,711.25	5.95	5.96	89.66	0.36	60.10	60.10	48.20	11.91	5.048 CC	
2,800.00	2,800.00	2,803.95	2,803.95	6.16	6.16	89.60	0.43	60.35	60.35	48.03	12.32	4.900 ES	
2,900.00	2,900.00	2,902.91	2,902.91	6.39	6.38	89.18	0.89	62.07	62.10	49.36	12.74	4.874 SF	
3,000.00	3,000.00	3,001.78	3,001.70	6.81	6.57	88.42	1.81	65.44	65.52	52.38	13.16	4.979	
3,100.00	3,100.00	3,100.00	3,099.78	6.83	6.77	87.43	3.15	70.41	70.64	57.07	13.57	5.205	
3,200.00	3,200.00	3,199.02	3,198.56	7.06	6.98	86.32	4.96	77.07	77.46	63.47	13.99	5.536	
3,300.00	3,300.00	3,297.26	3,296.43	7.28	7.20	85.18	7.19	85.31	85.99	71.59	14.40	5.970	
3,400.00	3,400.00	3,396.08	3,394.74	7.51	7.42	84.10	9.81	94.97	95.98	81.15	14.82	6.474	
3,500.00	3,500.00	3,495.55	3,493.68	7.73	7.64	83.21	12.49	104.87	106.16	90.90	15.26	6.957	
3,600.00	3,600.00	3,595.01	3,592.61	7.96	7.87	82.47	15.17	114.76	116.37	100.67	15.69	7.414	
3,700.00	3,700.00	3,694.48	3,691.55	8.18	8.10	81.85	17.85	124.65	126.59	110.46	16.13	7.847	
3,800.00	3,800.00	3,793.95	3,790.49	8.41	8.33	81.32	20.53	134.55	136.82	120.25	16.57	8.257	
3,900.00	3,900.00	3,893.42	3,889.43	8.63	8.57	80.87	23.21	144.44	147.07	130.08	17.01	8.646	
4,000.00	4,000.00	3,992.88	3,988.36	8.86	8.81	80.48	25.89	154.34	157.32	139.87	17.45	9.016	
4,100.00	4,100.00	4,092.35	4,087.30	9.08	9.05	80.13	28.57	164.23	167.58	149.69	17.89	9.367	
4,200.00	4,200.00	4,191.82	4,186.24	9.31	9.30	79.82	31.25	174.12	177.85	159.51	18.33	9.700	
4,300.00	4,300.00	4,291.29	4,285.18	9.53	9.54	79.55	33.93	184.02	188.11	169.34	18.78	10.018	
4,400.00	4,400.00	4,390.75	4,384.12	9.76	9.79	79.31	36.61	193.91	198.39	179.17	19.22	10.321	
4,500.00	4,500.00	4,490.22	4,483.05	9.98	10.04	79.09	39.29	203.80	208.66	189.00	19.67	10.611	
4,600.00	4,600.00	4,589.69	4,581.99	10.21	10.28	78.89	41.98	213.70	218.94	198.83	20.11	10.887	
4,700.00	4,700.00	4,689.16	4,680.93	10.43	10.54	78.71	44.66	223.59	229.22	208.67	20.56	11.151	
4,800.00	4,800.00	4,788.62	4,779.87	10.66	10.78	78.54	47.34	233.49	239.51	218.50	21.00	11.403	
4,900.00	4,900.00	4,888.09	4,878.81	10.88	11.04	78.39	50.02	243.38	249.79	228.34	21.45	11.645	
5,000.00	5,000.00	4,987.56	4,977.74	11.11	11.30	78.25	52.70	253.27	260.08	238.18	21.90	11.877	
5,100.00	5,100.00	5,087.07	5,076.73	11.33	11.55	57.35	55.38	263.17	269.90	247.55	22.34	12.079	
5,200.00	5,199.96	5,186.67	5,175.79	11.55	11.81	57.60	58.06	273.08	278.78	255.99	22.79	12.233	
5,300.00	5,299.86	5,286.30	5,274.90	11.78	12.07	58.14	60.75	282.99	286.76	263.52	23.24	12.341	
5,400.00	5,399.88	5,385.95	5,373.52	12.00	12.33	58.94	63.43	292.90	293.86	270.19	23.68	12.408	
5,500.00	5,499.41	5,485.80	5,473.13	12.22	12.59	59.95	66.12	302.81	300.41	276.28	24.13	12.450	
5,600.00	5,599.13	5,585.24	5,572.24	12.45	12.85	60.94	68.80	312.72	307.03	282.45	24.58	12.491	
5,700.00	5,698.88	5,684.88	5,671.36	12.67	13.11	61.89	71.49	322.64	313.74	288.71	25.03	12.534	
5,800.00	5,798.59	5,784.53	5,770.47	12.89	13.37	62.79	74.18	332.55	320.53	295.04	25.48	12.577	
5,900.00	5,898.31	5,884.17	5,869.58	13.12	13.63	63.66	76.86	342.46	327.39	301.46	25.94	12.622	
6,000.00	5,998.04	5,983.81	5,968.69	13.35	13.90	64.50	79.55	352.37	334.33	307.94	26.40	12.666	
6,100.00	6,097.77	6,083.48	6,067.81	13.57	14.16	65.30	82.23	362.28	341.34	314.48	26.85	12.711	
6,200.00	6,197.50	6,183.10	6,166.92	13.80	14.42	66.06	84.92	372.19	348.41	321.09	27.31	12.758	
6,300.00	6,297.22	6,282.74	6,266.03	14.03	14.69	66.80	87.60	382.10	355.53	327.76	27.77	12.801	
6,400.00	6,396.95	6,382.39	6,365.14	14.26	14.95	67.51	90.29	392.01	362.72	334.48	28.24	12.846	
6,500.00	6,496.68	6,482.03	6,464.26	14.49	15.22	68.19	92.97	401.93	369.96	341.25	28.70	12.890	
6,600.00	6,596.40	6,581.67	6,563.37	14.72	15.49	68.84	95.66	411.84	377.24	348.08	29.17	12.934	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 234H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi-Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
6,700.00	6,696.13	6,681.32	6,682.48	14.98	15.75	69.47	98.34	421.75	384.58	354.94	29.63	12.978	
6,800.00	6,795.86	6,780.98	6,781.60	15.19	16.02	70.07	101.03	431.66	391.98	361.88	30.10	13.022	
6,900.00	6,895.58	6,880.60	6,880.71	15.42	16.29	70.68	103.71	441.57	399.38	368.81	30.57	13.065	
7,000.00	6,995.31	6,980.25	6,959.82	15.66	16.55	71.22	106.40	451.48	406.84	375.80	31.04	13.107	
7,100.00	7,095.04	7,079.89	7,058.93	15.89	16.82	71.78	109.08	461.39	414.34	382.82	31.51	13.149	
7,200.00	7,194.77	7,179.53	7,158.05	16.12	17.09	72.28	111.77	471.31	421.87	389.89	31.98	13.190	
7,300.00	7,294.49	7,279.18	7,257.16	16.36	17.36	72.79	114.46	481.22	429.44	396.98	32.46	13.231	
7,400.00	7,394.22	7,378.82	7,356.27	16.60	17.63	73.27	117.14	491.13	437.04	404.10	32.93	13.271	
7,500.00	7,493.95	7,478.46	7,455.39	16.83	17.90	73.74	119.83	501.04	444.67	411.26	33.41	13.311	
7,600.00	7,593.67	7,578.10	7,554.50	17.07	18.16	74.20	122.51	510.95	452.32	418.44	33.88	13.350	
7,700.00	7,693.40	7,677.75	7,653.61	17.31	18.43	74.63	125.20	520.86	460.01	425.65	34.36	13.388	
7,800.00	7,793.13	7,777.39	7,752.72	17.54	18.70	75.06	127.88	530.77	467.72	432.88	34.84	13.425	
7,900.00	7,892.86	7,877.03	7,851.84	17.78	18.97	75.47	130.57	540.68	475.48	440.14	35.32	13.462	
8,000.00	7,992.58	7,976.68	7,950.85	18.02	19.24	75.87	133.25	550.60	483.22	447.42	35.80	13.499	
8,100.00	8,092.31	8,076.32	8,050.08	18.26	19.51	76.25	135.94	560.51	491.00	454.72	36.28	13.535	
8,200.00	8,192.04	8,175.98	8,149.17	18.50	19.78	76.62	138.62	570.42	498.80	462.04	36.76	13.570	
8,300.00	8,291.76	8,275.81	8,248.29	18.73	20.06	76.99	141.31	580.33	506.63	469.39	37.24	13.604	
8,400.00	8,391.49	8,375.25	8,347.40	18.97	20.33	77.34	143.99	590.24	514.47	476.75	37.72	13.638	
8,500.00	8,491.22	8,474.89	8,446.51	19.21	20.60	77.68	146.68	600.15	522.33	484.12	38.21	13.671	
8,600.00	8,590.95	8,574.54	8,545.63	19.45	20.87	78.01	149.37	610.06	530.21	491.52	38.69	13.704	
8,700.00	8,690.67	8,674.18	8,644.74	19.69	21.14	78.33	152.05	619.98	538.11	498.93	39.17	13.736	
8,800.00	8,790.40	8,773.82	8,743.85	19.93	21.41	78.64	154.74	629.89	546.02	506.38	39.66	13.768	
8,900.00	8,890.13	8,873.61	8,843.10	20.18	21.68	78.94	157.42	639.81	553.95	513.80	40.15	13.798	
9,000.00	8,989.85	8,982.92	8,951.93	20.42	21.92	79.31	160.09	649.65	561.01	520.37	40.64	13.803	
9,100.00	9,089.58	9,082.39	9,061.11	20.66	22.14	79.76	162.22	657.50	566.37	525.25	41.12	13.772	
9,200.00	9,189.31	9,201.96	9,170.51	20.90	22.35	80.30	163.80	663.34	570.06	528.48	41.60	13.705	
9,300.00	9,289.03	9,311.54	9,280.01	21.14	22.54	80.92	164.83	667.15	572.08	530.03	42.08	13.603	
9,400.00	9,388.76	9,421.05	9,389.50	21.38	22.73	81.63	165.32	668.95	572.47	529.97	42.51	13.468	
9,500.00	9,488.49	9,524.54	9,492.99	21.62	22.92	82.38	165.36	669.10	571.57	528.61	42.96	13.304	
9,600.00	9,588.28	9,624.33	9,592.78	21.81	23.11	83.01	165.36	669.10	570.76	527.39	43.37	13.160	
9,700.00	9,688.18	9,724.22	9,692.68	21.99	23.31	83.47	165.38	669.10	570.21	526.44	43.77	13.027	
9,800.00	9,788.13	9,824.16	9,792.63	22.17	23.50	83.75	165.38	669.10	569.89	525.73	44.18	12.904	
9,900.00	9,888.12	9,924.17	9,892.62	22.34	23.70	83.88	165.38	669.10	569.77	525.22	44.55	12.790	
9,939.48	9,927.60	9,963.55	9,932.00	22.41	23.78	83.87	165.36	669.10	569.76	525.05	44.70	12.745	
10,000.00	9,988.12	10,011.63	9,980.03	22.53	23.86	104.90	163.34	669.11	570.43	525.51	44.92	12.700	
10,100.00	10,088.12	10,089.19	10,056.84	22.75	23.98	106.03	151.64	669.18	574.60	529.38	45.25	12.699	
10,200.00	10,188.12	10,182.37	10,126.85	22.65	24.07	107.97	131.21	669.29	583.28	537.79	45.49	12.623	
10,300.00	10,288.12	10,229.38	10,188.40	23.18	24.15	110.41	104.79	669.44	597.54	551.97	45.58	13.111	
10,400.00	10,388.12	10,289.40	10,240.57	23.40	24.22	113.06	75.17	669.60	618.49	573.03	45.46	13.606	
10,500.00	10,488.12	10,350.00	10,289.81	23.62	24.29	116.08	39.90	669.80	646.97	601.77	45.20	14.314	
10,600.00	10,588.12	10,388.65	10,319.16	23.84	24.33	118.14	14.76	669.94	683.07	638.57	44.50	15.349	
10,700.00	10,688.12	10,429.00	10,347.92	24.06	24.37	120.37	-13.52	670.10	726.84	683.07	43.77	16.805	
10,800.00	10,788.12	10,484.12	10,371.28	24.28	24.41	122.35	-39.73	670.25	777.71	734.81	42.90	18.129	
10,900.00	10,888.12	10,500.00	10,393.44	24.49	24.46	124.38	-67.96	670.40	834.98	792.89	42.08	19.841	
11,000.00	10,988.11	10,521.92	10,408.09	24.70	24.49	-51.98	-85.65	670.50	897.35	856.23	41.12	21.823	
11,100.00	11,086.96	10,550.00	10,421.28	24.83	24.53	-45.03	-109.48	670.63	958.07	917.87	40.20	23.831	
11,200.00	11,181.83	10,580.83	10,436.66	24.82	24.57	-39.57	-136.30	670.78	1,013.53	974.20	39.33	25.773	
11,300.00	11,289.84	10,600.00	10,445.41	24.88	24.61	-35.70	-153.24	670.88	1,062.49	1,024.15	38.33	27.716	
11,400.00	11,348.32	10,650.00	10,455.62	25.02	24.71	-32.39	-198.96	671.13	1,103.25	1,063.44	37.81	29.182	
11,500.00	11,414.88	10,680.81	10,476.09	25.06	24.78	-30.30	-228.03	671.30	1,135.56	1,098.39	37.17	30.550	
11,600.00	11,467.49	10,700.00	10,481.77	25.10	24.83	-28.96	-248.26	671.40	1,158.96	1,122.34	36.62	31.652	
11,700.00	11,504.57	10,750.00	10,493.74	25.27	24.97	-28.11	-294.79	671.67	1,172.12	1,135.80	36.52	32.094	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 234H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MYD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +NW-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
11,800.00	11,524.98	10,800.00	10,501.44	25.51	25.14	-27.91	-344.17	671.94	1,175.92	1,139.30	36.62	32.114	
11,900.00	11,529.00	10,822.25	10,503.47	25.82	25.22	-28.11	-366.33	672.07	1,170.16	1,133.33	36.83	31.789	
12,000.00	11,529.00	10,860.83	10,504.95	26.23	25.37	-28.15	-404.87	672.28	1,166.58	1,129.26	37.31	31.271	
12,100.00	11,529.00	10,952.79	10,505.39	26.72	25.81	-28.16	-466.83	672.80	1,166.12	1,128.15	37.97	30.715	
12,200.00	11,529.00	11,052.79	10,505.86	27.31	26.38	-28.17	-596.83	673.38	1,165.70	1,126.97	38.72	30.104	
12,300.00	11,529.00	11,152.79	10,506.34	27.98	27.04	-28.18	-696.83	673.91	1,165.28	1,125.71	39.57	29.451	
12,400.00	11,529.00	11,252.79	10,506.81	28.73	27.78	-28.19	-796.82	674.47	1,164.86	1,124.36	40.50	28.765	
12,500.00	11,529.00	11,352.79	10,507.28	29.55	28.80	-28.20	-896.82	675.03	1,164.44	1,122.94	41.50	28.057	
12,600.00	11,529.00	11,452.79	10,507.76	30.44	29.49	-28.21	-996.81	675.59	1,164.02	1,121.44	42.58	27.336	
12,700.00	11,529.00	11,552.79	10,508.23	31.38	30.44	-28.22	-1,096.81	676.15	1,163.60	1,119.87	43.73	26.610	
12,800.00	11,529.00	11,652.79	10,508.71	32.38	31.45	-28.23	-1,196.81	676.70	1,163.18	1,118.25	44.94	25.885	
12,900.00	11,529.00	11,752.78	10,509.18	33.44	32.51	-28.24	-1,296.80	677.26	1,162.76	1,116.56	46.20	25.167	
13,000.00	11,529.00	11,852.78	10,509.66	34.54	33.62	-28.25	-1,396.80	677.82	1,162.34	1,114.82	47.52	24.459	
13,100.00	11,529.00	11,952.78	10,510.13	35.68	34.77	-28.27	-1,496.80	678.38	1,161.93	1,113.04	48.89	23.767	
13,200.00	11,529.00	12,052.78	10,510.60	36.85	35.96	-28.28	-1,596.79	678.94	1,161.51	1,111.21	50.30	23.091	
13,300.00	11,529.00	12,152.78	10,511.08	38.07	37.18	-28.29	-1,696.79	679.50	1,161.09	1,109.33	51.76	22.434	
13,400.00	11,529.00	12,252.78	10,511.55	39.31	38.43	-28.30	-1,796.78	680.05	1,160.67	1,107.42	53.25	21.798	
13,500.00	11,529.00	12,352.78	10,512.03	40.58	39.72	-28.31	-1,896.78	680.61	1,160.25	1,105.48	54.77	21.183	
13,600.00	11,529.00	12,452.78	10,512.50	41.88	41.02	-28.32	-1,996.78	681.17	1,159.83	1,103.50	56.33	20.589	
13,700.00	11,529.00	12,552.78	10,512.98	43.20	42.35	-28.33	-2,096.77	681.73	1,159.41	1,101.49	57.92	20.017	
13,800.00	11,529.00	12,652.77	10,513.45	44.54	43.70	-28.34	-2,196.77	682.29	1,159.00	1,099.46	59.54	19.467	
13,900.00	11,529.00	12,752.77	10,513.92	45.90	45.07	-28.35	-2,296.76	682.84	1,158.58	1,097.40	61.18	18.938	
14,000.00	11,529.00	12,852.77	10,514.40	47.28	46.46	-28.36	-2,396.76	683.40	1,158.16	1,095.32	62.84	18.430	
14,100.00	11,529.00	12,952.77	10,514.87	48.67	47.87	-28.38	-2,496.76	683.96	1,157.74	1,093.21	64.53	17.942	
14,200.00	11,529.00	13,052.77	10,515.35	50.08	49.28	-28.39	-2,596.75	684.52	1,157.32	1,091.09	66.23	17.473	
14,300.00	11,529.00	13,152.77	10,515.82	51.51	50.72	-28.40	-2,696.75	685.08	1,156.90	1,088.95	67.96	17.024	
14,400.00	11,529.00	13,252.77	10,516.30	52.94	52.16	-28.41	-2,796.75	685.64	1,156.48	1,086.79	69.70	16.592	
14,500.00	11,529.00	13,352.77	10,516.77	54.39	53.62	-28.42	-2,896.74	686.19	1,156.07	1,084.61	71.46	16.178	
14,600.00	11,529.00	13,452.77	10,517.24	55.85	55.08	-28.43	-2,996.74	686.75	1,155.65	1,082.42	73.23	15.781	
14,700.00	11,529.00	13,552.76	10,517.72	57.31	56.56	-28.44	-3,096.73	687.31	1,155.23	1,080.21	75.02	15.399	
14,800.00	11,529.00	13,652.76	10,518.19	58.79	58.04	-28.45	-3,196.73	687.87	1,154.81	1,077.99	76.82	15.033	
14,900.00	11,529.00	13,752.76	10,518.67	60.28	59.53	-28.46	-3,296.73	688.43	1,154.39	1,075.76	78.63	14.681	
15,000.00	11,529.00	13,852.76	10,519.14	61.77	61.03	-28.48	-3,396.72	688.99	1,153.98	1,073.52	80.45	14.343	
15,100.00	11,529.00	13,952.76	10,519.62	63.27	62.54	-28.49	-3,496.72	689.54	1,153.56	1,071.27	82.29	14.019	
15,200.00	11,529.00	14,052.76	10,520.09	64.78	64.05	-28.50	-3,596.72	690.10	1,153.14	1,069.01	84.13	13.706	
15,300.00	11,529.00	14,152.76	10,520.56	66.29	65.57	-28.51	-3,696.71	690.66	1,152.72	1,066.74	85.99	13.406	
15,400.00	11,529.00	14,252.76	10,521.04	67.81	67.10	-28.52	-3,796.71	691.22	1,152.30	1,064.46	87.85	13.117	
15,500.00	11,529.00	14,352.76	10,521.51	69.34	68.63	-28.53	-3,896.70	691.78	1,151.89	1,062.17	89.72	12.839	
15,600.00	11,529.00	14,452.75	10,521.99	70.87	70.16	-28.54	-3,996.70	692.33	1,151.47	1,059.87	91.60	12.571	
15,700.00	11,529.00	14,552.75	10,522.46	72.40	71.70	-28.55	-4,096.70	692.89	1,151.05	1,057.57	93.49	12.313	
15,800.00	11,529.00	14,652.75	10,522.93	73.94	73.25	-28.57	-4,196.69	693.45	1,150.63	1,055.25	95.38	12.064	
15,900.00	11,529.00	14,752.75	10,523.41	75.48	74.79	-28.58	-4,296.69	694.01	1,150.22	1,052.94	97.28	11.824	
16,000.00	11,529.00	14,852.75	10,523.88	77.03	76.35	-28.59	-4,396.68	694.57	1,149.80	1,050.61	99.19	11.592	
16,100.00	11,529.00	14,952.75	10,524.36	78.58	77.90	-28.60	-4,496.68	695.13	1,149.38	1,048.28	101.10	11.369	
16,200.00	11,529.00	15,052.75	10,524.83	80.14	79.46	-28.61	-4,596.68	695.68	1,148.96	1,045.94	103.02	11.153	
16,300.00	11,529.00	15,152.75	10,525.31	81.70	81.02	-28.62	-4,696.67	696.24	1,148.55	1,043.60	104.94	10.944	
16,400.00	11,529.00	15,252.74	10,525.78	83.26	82.59	-28.63	-4,796.67	696.80	1,148.13	1,041.25	106.87	10.743	
16,500.00	11,529.00	15,352.74	10,526.25	84.82	84.16	-28.64	-4,896.67	697.36	1,147.71	1,038.90	108.81	10.548	
16,600.00	11,529.00	15,452.74	10,526.73	86.39	85.73	-28.65	-4,996.66	697.92	1,147.29	1,036.54	110.75	10.359	
16,700.00	11,529.00	15,552.74	10,527.20	87.96	87.30	-28.67	-5,096.66	698.48	1,146.88	1,034.18	112.69	10.177	
16,800.00	11,529.00	15,652.74	10,527.68	89.53	88.88	-28.68	-5,196.65	699.03	1,146.46	1,031.82	114.64	10.000	
16,900.00	11,529.00	15,752.74	10,528.15	91.11	90.46	-28.69	-5,296.65	699.59	1,146.04	1,029.45	116.59	9.829	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 234H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (')	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/S (usft)	+E/W (usft)					
17,000.00	11,529.00	15,852.74	10,528.63	92.68	92.04	-28.70	-5,396.65	700.15	1,145.63	1,027.07	118.55	9.663	
17,100.00	11,529.00	15,952.74	10,529.10	94.28	93.82	-28.71	-5,496.64	700.71	1,145.21	1,024.70	120.51	9.503	
17,200.00	11,529.00	16,052.74	10,529.57	95.84	95.20	-28.72	-5,596.64	701.27	1,144.79	1,022.31	122.48	9.347	
17,300.00	11,529.00	16,152.73	10,530.05	97.43	96.79	-28.73	-5,696.64	701.82	1,144.37	1,019.93	124.45	9.198	
17,400.00	11,529.00	16,252.73	10,530.52	99.01	98.38	-28.75	-5,796.63	702.38	1,143.96	1,017.54	126.42	9.049	
17,500.00	11,529.00	16,352.73	10,531.00	100.60	99.97	-28.76	-5,896.63	702.94	1,143.54	1,015.15	128.39	8.907	
17,600.00	11,529.00	16,452.73	10,531.47	102.19	101.56	-28.77	-5,996.62	703.50	1,143.12	1,012.75	130.37	8.768	
17,700.00	11,529.00	16,552.73	10,531.95	103.78	103.15	-28.78	-6,096.62	704.06	1,142.71	1,010.35	132.35	8.634	
17,800.00	11,529.00	16,652.73	10,532.42	105.37	104.74	-28.79	-6,196.62	704.62	1,142.29	1,007.95	134.34	8.503	
17,900.00	11,529.00	16,752.73	10,532.89	106.96	106.34	-28.80	-6,296.61	705.17	1,141.87	1,005.55	136.32	8.378	
18,000.00	11,529.00	16,852.73	10,533.37	108.56	107.94	-28.81	-6,396.61	705.73	1,141.46	1,003.14	138.31	8.253	
18,100.00	11,529.00	16,952.73	10,533.84	110.15	109.53	-28.82	-6,496.60	706.29	1,141.04	1,000.73	140.31	8.132	
18,200.00	11,529.00	17,052.72	10,534.32	111.75	111.13	-28.84	-6,596.60	706.85	1,140.62	998.32	142.30	8.016	
18,300.00	11,529.00	17,152.72	10,534.79	113.35	112.73	-28.85	-6,696.60	707.41	1,140.21	995.91	144.30	7.902	
18,400.00	11,529.00	17,252.72	10,535.27	114.95	114.34	-28.86	-6,796.59	707.97	1,139.79	993.49	146.30	7.791	
18,500.00	11,529.00	17,352.72	10,535.74	116.55	115.94	-28.87	-6,896.59	708.52	1,139.37	991.07	148.30	7.683	
18,600.00	11,529.00	17,452.72	10,536.21	118.15	117.54	-28.88	-6,996.59	709.08	1,138.96	988.65	150.31	7.577	
18,700.00	11,529.00	17,552.72	10,536.69	119.75	119.15	-28.89	-7,096.58	709.64	1,138.54	986.22	152.32	7.475	
18,800.00	11,529.00	17,652.72	10,537.16	121.36	120.75	-28.90	-7,196.58	710.20	1,138.12	983.80	154.33	7.375	
18,900.00	11,529.00	17,752.72	10,537.64	122.96	122.36	-28.92	-7,296.57	710.76	1,137.71	981.37	156.34	7.277	
19,000.00	11,529.00	17,852.72	10,538.11	124.57	123.97	-28.93	-7,396.57	711.31	1,137.29	978.94	158.35	7.182	
19,100.00	11,529.00	17,952.71	10,538.58	126.17	125.57	-28.94	-7,496.57	711.87	1,136.88	976.51	160.37	7.089	
19,200.00	11,529.00	18,052.71	10,539.06	127.78	127.18	-28.95	-7,596.56	712.43	1,136.46	974.07	162.39	6.998	
19,300.00	11,529.00	18,152.71	10,539.53	129.39	128.79	-28.96	-7,696.56	712.99	1,136.04	971.64	164.41	6.910	
19,400.00	11,529.00	18,252.71	10,540.01	131.00	130.40	-28.97	-7,796.56	713.55	1,135.63	969.20	166.43	6.823	
19,500.00	11,529.00	18,352.71	10,540.48	132.61	132.02	-28.98	-7,896.55	714.11	1,135.21	966.76	168.45	6.739	
19,600.00	11,529.00	18,452.71	10,540.96	134.22	133.63	-29.00	-7,996.55	714.66	1,134.80	964.31	170.48	6.656	
19,700.00	11,529.00	18,552.71	10,541.43	135.83	135.24	-29.01	-8,096.54	715.22	1,134.38	961.87	172.51	6.576	
19,800.00	11,529.00	18,652.71	10,541.90	137.44	136.85	-29.02	-8,196.54	715.78	1,133.96	959.43	174.54	6.497	
19,900.00	11,529.00	18,752.71	10,542.38	139.05	138.47	-29.03	-8,296.54	716.34	1,133.55	956.98	176.57	6.420	
20,000.00	11,529.00	18,852.70	10,542.85	140.67	140.08	-29.04	-8,396.53	716.90	1,133.13	954.53	178.60	6.344	
20,100.00	11,529.00	18,952.70	10,543.33	142.28	141.70	-29.05	-8,496.53	717.46	1,132.72	952.08	180.64	6.271	
20,200.00	11,529.00	19,052.70	10,543.80	143.90	143.31	-29.07	-8,596.52	718.01	1,132.30	949.63	182.67	6.198	
20,300.00	11,529.00	19,152.70	10,544.28	145.51	144.93	-29.08	-8,696.52	718.57	1,131.89	947.17	184.71	6.128	
20,400.00	11,529.00	19,252.70	10,544.75	147.13	146.55	-29.09	-8,796.52	719.13	1,131.47	944.72	186.75	6.059	
20,500.00	11,529.00	19,352.70	10,545.22	148.74	148.16	-29.10	-8,896.51	719.69	1,131.05	942.26	188.79	5.991	
20,600.00	11,529.00	19,452.70	10,545.70	150.36	149.78	-29.11	-8,996.51	720.25	1,130.64	939.80	190.84	5.925	
20,700.00	11,529.00	19,552.70	10,546.17	151.98	151.40	-29.12	-9,096.51	720.80	1,130.22	937.34	192.88	5.860	
20,800.00	11,529.00	19,652.70	10,546.65	153.59	153.02	-29.13	-9,196.50	721.36	1,129.81	934.88	194.93	5.796	
20,900.00	11,529.00	19,752.69	10,547.12	155.21	154.64	-29.15	-9,296.50	721.92	1,129.39	932.42	196.97	5.734	
21,000.00	11,529.00	19,852.69	10,547.60	156.83	156.26	-29.16	-9,396.49	722.48	1,128.98	929.95	199.02	5.673	
21,100.00	11,529.00	19,952.69	10,548.07	158.45	157.88	-29.17	-9,496.49	723.04	1,128.56	927.49	201.07	5.613	
21,200.00	11,529.00	20,052.69	10,548.54	160.07	159.50	-29.18	-9,596.49	723.60	1,128.15	925.02	203.13	5.554	
21,300.00	11,529.00	20,152.69	10,549.02	161.69	161.12	-29.19	-9,696.48	724.15	1,127.73	922.55	205.18	5.496	
21,400.00	11,529.00	20,252.69	10,549.49	163.31	162.74	-29.20	-9,796.48	724.71	1,127.32	920.08	207.23	5.440	
21,472.24	11,529.00	20,324.92	10,549.84	164.48	163.82	-29.21	-9,868.71	725.12	1,127.02	918.38	208.64	5.402	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 528H - OH - Plan #3														Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	4.40	4.40	0.00	0.00	89.71	0.48	90.10	90.10					
100.00	100.00	104.40	104.40	0.09	0.10	89.71	0.48	90.10	90.10	89.91	0.19	480.367		
200.00	200.00	204.40	204.40	0.32	0.32	89.71	0.48	90.10	90.10	89.46	0.64	141.424		
300.00	300.00	304.40	304.40	0.54	0.55	89.71	0.48	90.10	90.10	89.01	1.09	82.918		
400.00	400.00	404.40	404.40	0.77	0.77	89.71	0.48	90.10	90.10	88.57	1.54	58.653		
500.00	500.00	504.40	504.40	0.99	0.99	89.71	0.48	90.10	90.10	88.12	1.99	45.375		
600.00	600.00	604.40	604.40	1.22	1.22	89.71	0.48	90.10	90.10	87.67	2.44	36.999		
700.00	700.00	704.40	704.40	1.44	1.44	89.71	0.48	90.10	90.10	87.22	2.88	31.234		
800.00	800.00	804.40	804.40	1.67	1.67	89.71	0.48	90.10	90.10	86.77	3.33	27.023		
900.00	900.00	904.40	904.40	1.89	1.89	89.71	0.48	90.10	90.10	86.32	3.78	23.812		
1,000.00	1,000.00	1,004.40	1,004.40	2.11	2.12	89.71	0.48	90.10	90.10	85.87	4.23	21.284		
1,100.00	1,100.00	1,104.40	1,104.40	2.34	2.34	89.71	0.48	90.10	90.10	85.42	4.68	19.241		
1,200.00	1,200.00	1,204.40	1,204.40	2.56	2.57	89.71	0.48	90.10	90.10	84.97	5.13	17.555		
1,300.00	1,300.00	1,304.40	1,304.40	2.79	2.79	89.71	0.48	90.10	90.10	84.52	5.58	16.142		
1,400.00	1,400.00	1,404.40	1,404.40	3.01	3.02	89.71	0.48	90.10	90.10	84.07	6.03	14.938		
1,500.00	1,500.00	1,504.40	1,504.40	3.24	3.24	89.71	0.48	90.10	90.10	83.62	6.48	13.902		
1,600.00	1,600.00	1,604.40	1,604.40	3.46	3.47	89.71	0.48	90.10	90.10	83.17	6.93	13.001		
1,700.00	1,700.00	1,704.40	1,704.40	3.69	3.69	89.71	0.48	90.10	90.10	82.72	7.38	12.209		
1,800.00	1,800.00	1,804.40	1,804.40	3.91	3.92	89.71	0.48	90.10	90.10	82.27	7.83	11.508		
1,900.00	1,900.00	1,904.40	1,904.40	4.14	4.14	89.71	0.48	90.10	90.10	81.82	8.28	10.883		
1,915.13	1,915.13	1,919.53	1,919.53	4.17	4.18	89.71	0.48	90.10	90.10	81.75	8.35	10.794 CC		
2,000.00	2,000.00	2,004.33	2,004.33	4.38	4.37	89.71	0.48	90.10	90.10	81.38	8.73	10.324 ES		
2,100.00	2,100.00	2,102.77	2,102.77	4.59	4.57	89.71	0.48	91.02	91.04	81.88	9.16	9.940		
2,200.00	2,200.00	2,201.15	2,201.11	4.81	4.77	89.72	0.48	93.63	93.69	84.12	9.57	9.785 SF		
2,300.00	2,300.00	2,300.00	2,299.88	5.04	4.97	89.73	0.48	97.95	98.06	88.06	9.99	9.812		
2,400.00	2,400.00	2,397.50	2,397.18	5.28	5.17	89.75	0.48	103.88	104.13	93.73	10.40	10.009		
2,500.00	2,500.00	2,495.35	2,494.74	5.49	5.38	89.78	0.48	111.50	111.92	101.10	10.82	10.348		
2,600.00	2,600.00	2,592.92	2,591.86	5.71	5.59	89.78	0.48	120.75	121.40	110.17	11.23	10.813		
2,700.00	2,700.00	2,692.02	2,690.40	5.94	5.82	89.80	0.48	131.24	131.98	120.33	11.66	11.324		
2,800.00	2,800.00	2,791.45	2,789.28	6.18	6.05	89.81	0.48	141.78	142.59	130.50	12.09	11.796		
2,900.00	2,900.00	2,890.89	2,888.16	6.39	6.28	89.83	0.48	152.33	153.19	140.67	12.52	12.232		
3,000.00	3,000.00	2,990.33	2,987.03	6.61	6.52	89.84	0.48	162.87	163.80	150.84	12.96	12.638		
3,100.00	3,100.00	3,089.78	3,085.91	6.83	6.76	89.85	0.48	173.42	174.40	161.00	13.40	13.018		
3,200.00	3,200.00	3,189.20	3,184.78	7.06	7.00	89.86	0.48	183.96	185.00	171.17	13.84	13.369		
3,300.00	3,300.00	3,288.64	3,283.66	7.28	7.25	89.86	0.48	194.50	195.61	181.33	14.28	13.699		
3,400.00	3,400.00	3,388.07	3,382.53	7.51	7.50	89.87	0.48	205.05	206.21	191.49	14.72	14.008		
3,500.00	3,500.00	3,487.51	3,481.41	7.73	7.75	89.88	0.48	215.59	216.82	201.85	15.16	14.298		
3,600.00	3,600.00	3,586.94	3,580.28	7.96	8.00	89.88	0.48	226.14	227.42	211.81	15.61	14.570		
3,700.00	3,700.00	3,686.38	3,679.16	8.18	8.26	89.89	0.48	236.68	238.02	221.97	16.05	14.827		
3,800.00	3,800.00	3,785.82	3,778.04	8.41	8.51	89.89	0.48	247.23	248.63	232.13	16.50	15.069		
3,900.00	3,900.00	3,885.25	3,876.91	8.63	8.77	89.90	0.48	257.77	259.23	242.29	16.95	15.297		
4,000.00	4,000.00	3,984.69	3,975.79	8.86	9.03	89.90	0.48	268.32	269.84	252.44	17.39	15.514		
4,100.00	4,100.00	4,084.12	4,074.66	9.08	9.29	89.91	0.48	278.88	280.44	262.60	17.84	15.718		
4,200.00	4,200.00	4,183.56	4,173.54	9.31	9.55	89.91	0.48	289.40	291.05	272.76	18.29	15.913		
4,300.00	4,300.00	4,283.00	4,272.41	9.53	9.81	89.91	0.48	299.95	301.65	282.91	18.74	16.097		
4,400.00	4,400.00	4,382.43	4,371.29	9.76	10.08	89.92	0.48	310.49	312.25	293.08	19.19	16.273		
4,500.00	4,500.00	4,481.87	4,470.18	9.98	10.34	89.92	0.48	321.04	322.86	303.22	19.64	16.440		
4,600.00	4,600.00	4,581.31	4,569.04	10.21	10.61	89.92	0.48	331.58	333.46	313.37	20.09	16.599		
4,700.00	4,700.00	4,680.74	4,667.91	10.43	10.87	89.92	0.48	342.13	344.07	323.53	20.54	16.750		
4,800.00	4,800.00	4,780.18	4,766.79	10.66	11.14	89.93	0.48	352.67	354.67	333.68	20.99	16.895		
4,900.00	4,900.00	4,879.61	4,865.87	10.88	11.41	89.93	0.48	363.21	365.27	343.83	21.44	17.034		
5,000.00	5,000.00	4,979.05	4,964.54	11.11	11.68	89.93	0.48	373.76	375.88	353.98	21.90	17.167		

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 528H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: Q-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,100.00	5,078.51	5,083.44	11.33	11.95	69.12	0.46	384.31	386.17	383.83	22.35	17.281	
5,200.00	5,199.96	5,178.01	5,182.38	11.55	12.22	69.38	0.46	394.88	395.86	373.06	22.80	17.385	
5,300.00	5,299.86	5,277.52	5,281.33	11.78	12.49	69.66	0.46	405.41	404.98	381.71	23.24	17.422	
5,400.00	5,399.68	5,377.00	5,380.25	12.00	12.76	70.56	0.46	415.96	413.52	389.82	23.69	17.453	
5,500.00	5,499.41	5,476.44	5,459.13	12.22	13.03	71.44	0.46	426.50	421.75	397.61	24.14	17.489	
5,600.00	5,599.13	5,575.89	5,558.01	12.45	13.30	72.31	0.46	437.05	430.08	405.48	24.60	17.486	
5,700.00	5,698.88	5,675.33	5,658.90	12.67	13.57	73.14	0.46	447.59	438.49	413.44	25.05	17.505	
5,800.00	5,798.59	5,774.77	5,755.78	12.89	13.84	73.95	0.46	458.14	447.00	421.50	25.50	17.528	
5,900.00	5,898.31	5,874.22	5,854.66	13.12	14.11	74.73	0.46	468.68	455.59	429.63	25.96	17.549	
6,000.00	5,998.04	5,973.66	5,953.54	13.35	14.39	75.47	0.46	479.23	464.27	437.85	26.42	17.572	
6,100.00	6,097.77	6,073.10	6,052.43	13.57	14.66	76.19	0.46	489.77	473.01	446.13	26.88	17.597	
6,200.00	6,197.50	6,172.55	6,151.31	13.80	14.93	76.89	0.46	500.32	481.83	454.49	27.34	17.623	
6,300.00	6,297.22	6,271.99	6,250.19	14.03	15.21	77.56	0.46	510.86	490.72	462.92	27.81	17.649	
6,400.00	6,396.95	6,371.43	6,349.07	14.26	15.48	78.20	0.46	521.41	499.67	471.40	28.27	17.675	
6,500.00	6,496.68	6,470.88	6,447.96	14.49	15.75	78.82	0.46	531.95	508.60	479.95	28.74	17.703	
6,600.00	6,596.40	6,570.32	6,546.84	14.72	16.03	79.42	0.46	542.50	517.78	488.55	29.20	17.730	
6,700.00	6,696.13	6,669.76	6,645.72	14.96	16.30	80.00	0.46	553.05	526.88	497.21	29.67	17.758	
6,800.00	6,795.86	6,769.21	6,744.60	15.19	16.58	80.56	0.46	563.59	536.06	505.92	30.14	17.785	
6,900.00	6,895.58	6,868.85	6,843.49	15.42	16.85	81.10	0.46	574.14	545.28	514.67	30.61	17.813	
7,000.00	6,995.31	6,968.09	6,942.37	15.66	17.13	81.63	0.46	584.68	554.56	523.47	31.08	17.841	
7,100.00	7,095.04	7,067.54	7,041.25	15.89	17.40	82.13	0.46	595.23	563.87	532.32	31.56	17.869	
7,200.00	7,194.77	7,166.98	7,140.13	16.12	17.68	82.62	0.46	605.77	573.23	541.20	32.03	17.897	
7,300.00	7,294.49	7,266.42	7,239.02	16.36	17.96	83.10	0.46	616.32	582.63	550.13	32.50	17.925	
7,400.00	7,394.22	7,365.87	7,337.90	16.60	18.23	83.55	0.46	626.88	592.07	559.09	32.98	17.953	
7,500.00	7,493.95	7,465.31	7,436.78	16.83	18.51	84.00	0.46	637.41	601.54	568.09	33.46	17.980	
7,600.00	7,593.67	7,575.71	7,546.65	17.07	18.75	84.50	0.46	648.12	610.19	576.24	33.95	17.972	
7,700.00	7,693.40	7,688.78	7,657.39	17.31	18.97	85.05	0.46	656.77	617.03	582.60	34.43	17.921	
7,800.00	7,793.13	7,798.03	7,768.45	17.54	19.19	85.63	0.46	663.28	622.06	587.16	34.90	17.824	
7,900.00	7,892.86	7,909.38	7,879.71	17.78	19.39	86.27	0.46	667.63	625.28	589.93	35.36	17.685	
8,000.00	7,992.58	8,020.74	7,991.05	18.02	19.58	86.96	0.46	669.82	626.73	590.92	35.80	17.505	
8,100.00	8,092.31	8,126.40	8,096.71	18.26	19.77	87.67	0.46	670.10	626.62	590.37	36.25	17.287	
8,200.00	8,192.04	8,226.13	8,196.44	18.50	19.96	88.34	0.46	670.10	626.36	589.86	36.70	17.066	
8,300.00	8,291.76	8,325.86	8,296.16	18.73	20.14	89.01	0.46	670.10	626.19	589.03	37.16	16.852	
8,400.00	8,391.49	8,425.58	8,395.88	18.97	20.33	89.69	0.46	670.10	626.11	588.49	37.62	16.645	
8,446.21	8,437.57	8,471.66	8,441.97	19.08	20.42	90.00	0.46	670.10	626.10	588.27	37.83	16.552	
8,500.00	8,491.22	8,525.31	8,495.62	19.21	20.52	90.36	0.46	670.10	626.11	588.04	38.07	16.445	
8,500.00	8,491.22	8,525.31	8,495.62	19.21	20.52	90.36	0.46	670.10	626.11	588.04	38.07	16.445	
8,600.00	8,590.95	8,611.16	8,581.45	19.45	20.68	91.02	-0.52	670.11	626.73	588.22	38.51	16.275	
8,700.00	8,690.67	8,679.81	8,649.58	19.69	20.80	92.16	-8.82	670.15	631.60	592.75	38.86	16.254	
8,800.00	8,790.40	8,750.00	8,717.72	19.93	20.93	93.99	-25.25	670.24	642.00	602.86	39.14	16.405	
8,900.00	8,890.13	8,800.00	8,784.77	20.18	21.02	95.65	-42.13	670.34	658.55	619.39	39.18	16.818	
9,000.00	8,989.85	8,850.00	8,810.17	20.42	21.12	97.57	-63.04	670.45	682.01	643.00	39.01	17.481	
9,100.00	9,089.58	8,900.00	8,853.58	20.66	21.22	99.70	-87.83	670.59	712.58	673.85	38.74	18.395	
9,200.00	9,189.31	8,950.00	8,894.65	20.90	21.32	102.00	-116.30	670.75	750.38	712.00	38.37	19.556	
9,300.00	9,289.03	9,000.00	8,933.10	21.14	21.43	104.40	-148.25	670.93	795.38	757.43	37.95	20.957	
9,400.00	9,388.76	9,021.17	8,948.51	21.38	21.48	105.44	-162.77	671.01	846.49	809.42	37.07	22.836	
9,500.00	9,488.49	9,050.00	8,966.61	21.62	21.56	106.92	-183.43	671.13	903.63	867.32	36.31	24.887	
9,600.00	9,588.28	9,077.42	8,988.73	21.81	21.63	108.00	-203.89	671.24	965.70	930.18	35.54	27.173	
9,700.00	9,688.18	9,100.00	9,000.91	21.99	21.69	110.89	-221.57	671.34	1,031.85	997.10	34.75	29.695	
9,800.00	9,788.13	9,123.68	9,015.03	22.17	21.76	112.87	-240.58	671.44	1,101.46	1,067.40	34.06	32.341	
9,900.00	9,888.12	9,150.00	9,029.78	22.34	21.84	114.98	-262.38	671.57	1,174.04	1,140.55	33.49	35.056	
10,000.00	9,988.12	9,150.00	9,029.78	22.53	21.84	135.98	-262.38	671.57	1,249.37	1,216.73	32.84	36.274	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 528H - OH - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface [°]	Offset Wellbore Centre -N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,100.00	10,088.12	9,179.41	9,045.05	22.75	21.94	137.18	-287.50	671.71	1,326.95	1,294.83	32.32	41.052		
10,200.00	10,188.12	9,200.00	9,054.97	22.98	22.01	138.02	-305.55	671.81	1,406.99	1,375.03	31.96	44.024		
10,300.00	10,288.12	9,200.00	9,054.97	23.18	22.01	138.02	-305.55	671.81	1,489.00	1,457.59	31.42	47.394		
10,400.00	10,388.12	9,221.23	9,064.51	23.40	22.09	138.88	-324.51	671.81	1,572.59	1,541.38	31.21	50.382		
10,500.00	10,488.12	9,250.00	9,078.31	23.82	22.21	140.02	-350.75	672.08	1,658.08	1,626.83	31.15	53.231		
10,600.00	10,588.12	9,250.00	9,078.31	23.84	22.21	140.02	-350.75	672.08	1,744.27	1,713.44	30.83	56.585		
10,700.00	10,688.12	9,250.00	9,078.31	24.06	22.21	140.02	-350.75	672.08	1,831.86	1,801.29	30.57	59.925		
10,800.00	10,788.12	9,250.00	9,078.31	24.28	22.21	140.02	-350.75	672.08	1,920.67	1,890.29	30.37	63.238		

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 614H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre -N/S (usft)	Offset Wellbore Centre -E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.80	0.80	0.00	0.00	-85.09	113.88	-1,325.24	1,330.12				
100.00	100.00	100.80	100.80	0.09	0.09	-85.09	113.88	-1,325.24	1,330.12	1,329.95	0.18	7,481.428	
200.00	200.00	200.80	200.80	0.32	0.31	-85.09	113.88	-1,325.24	1,330.12	1,329.50	0.63	2,120.320	
300.00	300.00	300.80	300.80	0.54	0.54	-85.09	113.88	-1,325.24	1,330.12	1,329.06	1.08	1,235.194	
400.00	400.00	400.80	400.80	0.77	0.76	-85.09	113.88	-1,325.24	1,330.12	1,328.60	1.53	871.420	
500.00	500.00	500.80	500.80	0.99	0.99	-85.09	113.88	-1,325.24	1,330.12	1,328.15	1.98	673.167	
600.00	600.00	600.80	600.80	1.22	1.21	-85.09	113.88	-1,325.24	1,330.12	1,327.70	2.43	548.403	
700.00	700.00	700.80	700.80	1.44	1.43	-85.09	113.88	-1,325.24	1,330.12	1,327.25	2.87	462.655	
800.00	800.00	800.80	800.80	1.67	1.66	-85.09	113.88	-1,325.24	1,330.12	1,326.80	3.32	400.098	
900.00	900.00	900.80	900.80	1.89	1.88	-85.09	113.88	-1,325.24	1,330.12	1,326.35	3.77	352.440	
1,000.00	1,000.00	1,000.80	1,000.80	2.11	2.11	-85.09	113.88	-1,325.24	1,330.12	1,325.90	4.22	314.928	
1,100.00	1,100.00	1,100.80	1,100.80	2.34	2.33	-85.09	113.88	-1,325.24	1,330.12	1,325.45	4.67	284.634	
1,200.00	1,200.00	1,200.80	1,200.80	2.56	2.56	-85.09	113.88	-1,325.24	1,330.12	1,325.00	5.12	259.656	
1,300.00	1,300.00	1,300.80	1,300.80	2.79	2.78	-85.09	113.88	-1,325.24	1,330.12	1,324.55	5.57	238.708	
1,400.00	1,400.00	1,400.80	1,400.80	3.01	3.01	-85.09	113.88	-1,325.24	1,330.12	1,324.10	6.02	220.888	
1,500.00	1,500.00	1,500.80	1,500.80	3.24	3.23	-85.09	113.88	-1,325.24	1,330.12	1,323.65	6.47	205.544	
1,600.00	1,600.00	1,600.80	1,600.80	3.46	3.46	-85.09	113.88	-1,325.24	1,330.12	1,323.20	6.92	192.193	
1,700.00	1,700.00	1,700.80	1,700.80	3.69	3.68	-85.09	113.88	-1,325.24	1,330.12	1,322.75	7.37	180.471	
1,800.00	1,800.00	1,800.80	1,800.80	3.91	3.91	-85.09	113.88	-1,325.24	1,330.12	1,322.30	7.82	170.096	
1,900.00	1,900.00	1,900.80	1,900.80	4.14	4.13	-85.09	113.88	-1,325.24	1,330.12	1,321.85	8.27	160.850	
2,000.00	2,000.00	2,000.80	2,000.80	4.36	4.36	-85.09	113.88	-1,325.24	1,330.12	1,321.41	8.72	152.556	
2,100.00	2,100.00	2,100.80	2,100.80	4.59	4.58	-85.09	113.88	-1,325.24	1,330.12	1,320.96	9.17	145.077	
2,200.00	2,200.00	2,200.80	2,200.80	4.81	4.81	-85.09	113.88	-1,325.24	1,330.12	1,320.51	9.62	138.296	
2,300.00	2,300.00	2,300.80	2,300.80	5.04	5.03	-85.09	113.88	-1,325.24	1,330.12	1,320.06	10.07	132.121	
2,400.00	2,400.00	2,400.80	2,400.80	5.26	5.26	-85.09	113.88	-1,325.24	1,330.12	1,319.61	10.52	126.473	
2,500.00	2,500.00	2,500.80	2,500.80	5.49	5.48	-85.09	113.88	-1,325.24	1,330.12	1,319.16	10.97	121.289	
2,600.00	2,600.00	2,600.80	2,600.80	5.71	5.71	-85.09	113.88	-1,325.24	1,330.12	1,318.71	11.42	116.513	
2,700.00	2,700.00	2,700.80	2,700.80	5.94	5.93	-85.09	113.88	-1,325.24	1,330.12	1,318.26	11.87	112.099	
2,800.00	2,800.00	2,800.80	2,800.80	6.16	6.15	-85.09	113.88	-1,325.24	1,330.12	1,317.81	12.32	108.007	
2,900.00	2,900.00	2,900.80	2,900.80	6.39	6.38	-85.09	113.88	-1,325.24	1,330.12	1,317.36	12.76	104.203	
3,000.00	3,000.00	3,000.80	3,000.80	6.61	6.60	-85.09	113.88	-1,325.24	1,330.12	1,316.91	13.21	100.659	
3,100.00	3,100.00	3,100.80	3,100.80	6.83	6.83	-85.09	113.88	-1,325.24	1,330.12	1,316.46	13.66	97.347	
3,200.00	3,200.00	3,200.80	3,200.80	7.06	7.05	-85.09	113.88	-1,325.24	1,330.12	1,316.01	14.11	94.248	
3,300.00	3,300.00	3,300.80	3,300.80	7.28	7.28	-85.09	113.88	-1,325.24	1,330.12	1,315.56	14.56	91.337	
3,400.00	3,400.00	3,400.80	3,400.80	7.51	7.50	-85.09	113.88	-1,325.24	1,330.12	1,315.11	15.01	88.602	
3,500.00	3,500.00	3,500.80	3,500.80	7.73	7.73	-85.09	113.88	-1,325.24	1,330.12	1,314.66	15.46	86.026	
3,600.00	3,600.00	3,600.80	3,600.80	7.96	7.95	-85.09	113.88	-1,325.24	1,330.12	1,314.21	15.91	83.598	
3,700.00	3,700.00	3,700.80	3,700.80	8.18	8.18	-85.09	113.88	-1,325.24	1,330.12	1,313.76	16.36	81.299	
3,800.00	3,800.00	3,800.80	3,800.80	8.41	8.40	-85.09	113.88	-1,325.24	1,330.12	1,313.31	16.81	79.125	
3,900.00	3,900.00	3,900.80	3,900.80	8.63	8.63	-85.09	113.88	-1,325.24	1,330.12	1,312.86	17.26	77.064	
4,000.00	4,000.00	4,000.80	4,000.80	8.86	8.85	-85.09	113.88	-1,325.24	1,330.12	1,312.41	17.71	75.108	
4,100.00	4,100.00	4,100.80	4,100.80	9.08	9.08	-85.09	113.88	-1,325.24	1,330.12	1,311.96	18.16	73.248	
4,200.00	4,200.00	4,200.80	4,200.80	9.31	9.30	-85.09	113.88	-1,325.24	1,330.12	1,311.52	18.61	71.479	
4,300.00	4,300.00	4,300.80	4,300.80	9.53	9.53	-85.09	113.88	-1,325.24	1,330.12	1,311.07	19.06	69.793	
4,400.00	4,400.00	4,400.80	4,400.80	9.76	9.75	-85.09	113.88	-1,325.24	1,330.12	1,310.62	19.51	68.185	
4,500.00	4,500.00	4,500.80	4,500.80	9.98	9.98	-85.09	113.88	-1,325.24	1,330.12	1,310.17	19.96	66.649	
4,600.00	4,600.00	4,600.80	4,600.80	10.21	10.20	-85.09	113.88	-1,325.24	1,330.12	1,309.72	20.41	65.181	
4,700.00	4,700.00	4,700.80	4,700.80	10.43	10.43	-85.09	113.88	-1,325.24	1,330.12	1,309.27	20.86	63.778	
4,800.00	4,800.00	4,800.80	4,800.80	10.66	10.65	-85.09	113.88	-1,325.24	1,330.12	1,308.82	21.31	62.430	
4,900.00	4,900.00	4,900.80	4,900.80	10.88	10.87	-85.09	113.88	-1,325.24	1,330.12	1,308.37	21.76	61.140	
5,000.00	5,000.00	5,000.80	5,000.80	11.11	11.10	-85.09	113.88	-1,325.24	1,330.12	1,307.92	22.20	59.902	
5,100.00	5,100.00	5,100.80	5,100.80	11.33	11.32	-105.96	113.88	-1,325.24	1,330.36	1,307.71	22.65	58.728	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 614H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDCM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.00	5,199.96	5,200.78	5,200.78	11.55	11.55	-108.08	113.88	-1,325.24	1,331.09	1,307.99	23.10	57.624	
5,300.00	5,299.88	5,300.66	5,300.66	11.78	11.77	-108.23	113.88	-1,325.24	1,332.30	1,308.75	23.55	56.585	
5,400.00	5,399.68	5,400.48	5,400.48	12.00	12.00	-108.47	113.88	-1,325.24	1,334.02	1,310.03	23.99	55.608	
5,500.00	5,499.41	5,500.21	5,500.21	12.22	12.22	-106.76	113.88	-1,325.24	1,336.12	1,311.89	24.44	54.678	
5,600.00	5,599.13	5,599.93	5,599.93	12.45	12.45	-107.06	113.88	-1,325.24	1,338.28	1,313.39	24.88	53.783	
5,700.00	5,698.86	5,698.66	5,698.66	12.67	12.67	-107.37	113.88	-1,325.24	1,340.47	1,315.14	25.33	52.919	
5,800.00	5,798.59	5,798.39	5,798.39	12.89	12.89	-107.67	113.88	-1,325.24	1,342.70	1,316.92	25.78	52.084	
5,900.00	5,898.31	5,898.11	5,898.11	13.12	13.12	-107.96	113.88	-1,325.24	1,344.96	1,318.73	26.23	51.278	
6,000.00	5,998.04	5,998.84	5,998.84	13.35	13.34	-108.26	113.88	-1,325.24	1,347.26	1,320.58	26.68	50.499	
6,100.00	6,097.77	6,098.57	6,098.57	13.57	13.57	-108.56	113.88	-1,325.24	1,349.60	1,322.47	27.13	49.746	
6,200.00	6,197.50	6,198.30	6,198.30	13.80	13.79	-108.85	113.88	-1,325.24	1,351.97	1,324.39	27.58	49.017	
6,300.00	6,297.22	6,298.02	6,298.02	14.03	14.02	-109.15	113.88	-1,325.24	1,354.38	1,326.35	28.03	48.312	
6,400.00	6,396.95	6,397.75	6,397.75	14.26	14.24	-109.44	113.88	-1,325.24	1,356.83	1,328.34	28.49	47.630	
6,500.00	6,496.68	6,497.48	6,497.48	14.49	14.46	-109.74	113.88	-1,325.24	1,359.31	1,330.37	28.94	46.969	
6,600.00	6,596.40	6,597.20	6,597.20	14.72	14.69	-110.03	113.88	-1,325.24	1,361.83	1,332.43	29.39	46.329	
6,700.00	6,696.13	6,696.93	6,696.93	14.96	14.91	-110.32	113.88	-1,325.24	1,364.38	1,334.53	29.85	45.709	
6,800.00	6,795.86	6,796.66	6,796.66	15.19	15.14	-110.61	113.88	-1,325.24	1,366.97	1,336.66	30.30	45.107	
6,900.00	6,895.58	6,896.38	6,896.38	15.42	15.36	-110.90	113.88	-1,325.24	1,369.59	1,338.83	30.76	44.525	
7,000.00	6,995.31	6,996.11	6,996.11	15.66	15.58	-111.18	113.88	-1,325.24	1,372.25	1,341.03	31.22	43.959	
7,100.00	7,095.04	7,112.07	7,112.06	15.89	15.84	-111.46	114.78	-1,324.59	1,374.37	1,342.67	31.70	43.350	
7,200.00	7,194.77	7,228.92	7,228.86	16.12	16.10	-111.70	117.56	-1,322.52	1,375.29	1,343.10	32.19	42.729	
7,300.00	7,294.49	7,345.92	7,345.71	16.36	16.36	-111.84	122.28	-1,319.04	1,374.99	1,342.32	32.67	42.093	
7,400.00	7,394.22	7,460.75	7,460.26	16.60	16.61	-111.90	128.76	-1,314.25	1,373.45	1,340.32	33.14	41.448	
7,500.00	7,493.95	7,560.73	7,559.93	16.83	16.83	-111.93	135.04	-1,309.81	1,371.45	1,337.88	33.59	40.830	
7,600.00	7,593.67	7,660.71	7,659.60	17.07	17.05	-111.96	141.32	-1,304.97	1,369.45	1,335.41	34.04	40.227	
7,700.00	7,693.40	7,760.69	7,759.28	17.31	17.27	-111.98	147.59	-1,300.33	1,367.45	1,332.95	34.50	39.639	
7,800.00	7,793.13	7,860.66	7,858.95	17.54	17.50	-112.01	153.87	-1,295.69	1,365.45	1,330.50	34.95	39.066	
7,900.00	7,892.86	7,960.64	7,958.62	17.78	17.72	-112.04	160.15	-1,291.05	1,363.45	1,328.04	35.41	38.505	
8,000.00	7,992.58	8,060.62	8,058.29	18.02	17.95	-112.07	166.43	-1,286.41	1,361.45	1,325.58	35.87	37.959	
8,100.00	8,092.31	8,160.60	8,157.97	18.26	18.17	-112.09	172.71	-1,281.78	1,359.45	1,323.12	36.33	37.425	
8,200.00	8,192.04	8,260.58	8,257.64	18.50	18.40	-112.12	178.98	-1,277.14	1,357.45	1,320.66	36.78	36.903	
8,300.00	8,291.78	8,360.55	8,357.31	18.73	18.62	-112.15	185.26	-1,272.50	1,355.45	1,318.20	37.24	36.383	
8,400.00	8,391.49	8,460.53	8,456.98	18.97	18.85	-112.18	191.54	-1,267.86	1,353.45	1,315.74	37.71	35.896	
8,500.00	8,491.22	8,560.51	8,556.66	19.21	19.08	-112.21	197.82	-1,263.22	1,351.45	1,313.28	38.17	35.409	
8,600.00	8,590.95	8,660.49	8,656.33	19.45	19.31	-112.24	204.09	-1,258.58	1,349.45	1,310.82	38.63	34.933	
8,700.00	8,690.67	8,760.46	8,756.00	19.69	19.54	-112.26	210.37	-1,253.94	1,347.46	1,308.36	39.09	34.468	
8,800.00	8,790.40	8,860.44	8,855.67	19.93	19.77	-112.29	216.65	-1,249.31	1,345.46	1,305.80	39.56	34.014	
8,900.00	8,890.13	8,960.42	8,955.35	20.18	20.00	-112.32	222.93	-1,244.67	1,343.46	1,303.44	40.02	33.589	
9,000.00	8,989.85	9,060.40	9,055.02	20.42	20.23	-112.35	229.21	-1,240.03	1,341.46	1,300.98	40.49	33.134	
9,100.00	9,089.58	9,160.38	9,154.69	20.66	20.46	-112.38	235.48	-1,235.39	1,339.47	1,298.51	40.95	32.708	
9,200.00	9,189.31	9,260.35	9,254.37	20.90	20.69	-112.41	241.76	-1,230.75	1,337.47	1,296.05	41.42	32.292	
9,300.00	9,289.03	9,360.33	9,354.04	21.14	20.93	-112.44	248.04	-1,226.11	1,335.47	1,293.59	41.89	31.884	
9,400.00	9,388.76	9,460.31	9,453.71	21.38	21.16	-112.46	254.32	-1,221.47	1,333.48	1,291.13	42.35	31.485	
9,500.00	9,488.49	9,560.29	9,553.38	21.62	21.39	-112.49	260.59	-1,216.84	1,331.48	1,288.66	42.82	31.096	
9,600.00	9,588.22	9,660.28	9,653.05	21.86	21.63	-112.46	266.87	-1,212.20	1,329.10	1,285.87	43.23	30.743	
9,700.00	9,688.18	9,760.19	9,752.68	21.89	21.66	-112.35	273.15	-1,207.56	1,326.06	1,282.41	43.64	30.384	
9,800.00	9,788.13	9,860.06	9,852.24	22.17	22.10	-112.17	279.42	-1,202.83	1,322.36	1,278.31	44.05	30.019	
9,900.00	9,888.12	9,959.84	9,951.71	22.34	22.33	-111.90	285.68	-1,198.30	1,318.01	1,273.56	44.45	29.648	
10,000.00	9,988.12	10,059.53	10,051.10	22.53	22.57	-90.79	291.94	-1,193.67	1,313.27	1,268.39	44.88	29.284	
10,100.00	10,088.12	10,147.35	10,138.70	22.75	22.74	-90.57	296.94	-1,189.98	1,309.00	1,263.72	45.28	28.910	
10,200.00	10,188.12	10,235.14	10,226.36	22.96	22.90	-90.40	300.85	-1,187.09	1,305.66	1,260.00	45.66	28.582	
10,300.00	10,288.12	10,323.07	10,314.21	23.18	23.06	-90.28	303.69	-1,185.00	1,303.26	1,257.21	46.05	28.303	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 614H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre -N/S (usft)	Offset Wellbore Centre -E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.00	10,388.12	10,411.08	10,402.19	23.40	23.21	-90.20	305.44	-1,183.70	1,301.78	1,255.35	46.43	28.040	
10,500.00	10,488.12	10,499.13	10,490.25	23.62	23.37	-90.17	306.10	-1,183.21	1,301.22	1,254.42	46.80	27.805	
10,537.49	10,525.81	10,535.30	10,528.41	23.70	23.43	-90.17	306.11	-1,183.21	1,301.21	1,254.26	46.95	27.716	
10,600.00	10,588.12	10,597.81	10,588.92	23.84	23.56	-90.17	306.11	-1,183.21	1,301.21	1,254.00	47.21	27.563	
10,700.00	10,688.12	10,697.81	10,688.92	24.06	23.78	-90.17	306.11	-1,183.21	1,301.21	1,253.56	47.65	27.308	
10,800.00	10,788.12	10,797.81	10,788.92	24.28	24.00	-90.17	306.11	-1,183.21	1,301.21	1,253.12	48.09	27.058	
10,900.00	10,888.12	10,897.81	10,888.92	24.49	24.22	-90.17	306.11	-1,183.21	1,301.21	1,252.68	48.53	26.812	
10,900.00	10,888.12	10,897.81	10,888.92	24.49	24.22	-90.17	306.11	-1,183.21	1,301.21	1,252.68	48.53	26.812 CC	
11,000.00	10,988.11	10,997.80	10,988.91	24.70	24.44	-90.19	306.11	-1,183.21	1,301.22	1,252.25	48.96	26.575	
11,100.00	11,088.96	11,098.65	11,087.76	24.83	24.66	-90.80	306.11	-1,183.21	1,301.34	1,252.03	49.32	26.388	
11,200.00	11,181.83	11,185.75	11,186.80	24.92	24.85	-92.00	303.94	-1,183.19	1,302.09	1,252.48	49.60	26.251	
11,300.00	11,269.84	11,302.78	11,291.94	24.98	25.01	-93.30	284.77	-1,183.08	1,303.58	1,253.77	49.60	26.174	
11,400.00	11,348.32	11,417.18	11,398.27	25.02	25.14	-94.54	243.09	-1,182.84	1,305.64	1,255.89	49.95	26.136	
11,500.00	11,414.88	11,539.67	11,500.52	25.06	25.27	-95.89	178.08	-1,182.48	1,308.02	1,257.84	50.09	26.115	
11,600.00	11,467.49	11,670.43	11,591.29	25.10	25.39	-96.88	82.34	-1,181.92	1,310.37	1,260.10	50.27	26.068	
11,700.00	11,504.57	11,808.65	11,661.56	25.27	25.58	-97.41	-36.29	-1,181.23	1,312.28	1,261.68	50.60	25.933	
11,800.00	11,524.98	11,952.24	11,702.36	25.51	25.97	-97.82	-173.57	-1,180.44	1,313.37	1,262.18	51.19	25.858	
11,900.00	11,529.00	12,081.83	11,710.00	25.82	26.46	-97.89	-302.55	-1,179.69	1,313.53	1,261.53	51.99	25.263	
12,000.00	11,529.00	12,181.63	11,710.00	26.23	26.95	-97.89	-402.54	-1,179.12	1,313.51	1,260.63	52.88	24.842	
12,100.00	11,529.00	12,281.63	11,710.00	26.72	27.51	-97.89	-502.54	-1,178.54	1,313.49	1,259.58	53.94	24.353	
12,200.00	11,529.00	12,381.63	11,710.00	27.31	28.17	-97.89	-602.54	-1,177.96	1,313.46	1,258.31	55.17	23.809	
12,300.00	11,529.00	12,481.63	11,710.00	27.98	28.90	-97.89	-702.54	-1,177.38	1,313.46	1,256.90	56.56	23.222	
12,400.00	11,529.00	12,581.63	11,710.00	28.73	29.70	-97.89	-802.54	-1,176.81	1,313.44	1,255.34	58.10	22.608	
12,500.00	11,529.00	12,681.63	11,710.00	29.55	30.57	-97.89	-902.54	-1,176.23	1,313.43	1,253.84	59.78	21.970	
12,600.00	11,529.00	12,781.63	11,710.00	30.44	31.50	-97.89	-1,002.53	-1,175.65	1,313.41	1,251.82	61.59	21.326	
12,700.00	11,529.00	12,881.63	11,710.00	31.38	32.49	-97.89	-1,102.53	-1,175.07	1,313.39	1,249.88	63.51	20.680	
12,800.00	11,529.00	12,981.63	11,710.00	32.38	33.52	-97.89	-1,202.53	-1,174.50	1,313.38	1,247.84	65.54	20.040	
12,900.00	11,529.00	13,081.63	11,710.00	33.44	34.61	-97.89	-1,302.53	-1,173.92	1,313.36	1,245.70	67.66	19.411	
13,000.00	11,529.00	13,181.63	11,710.00	34.54	35.74	-97.89	-1,402.53	-1,173.34	1,313.34	1,243.47	69.87	18.797	
13,100.00	11,529.00	13,281.63	11,710.00	35.68	36.90	-97.89	-1,502.53	-1,172.76	1,313.33	1,241.16	72.16	18.200	
13,200.00	11,529.00	13,381.63	11,710.00	36.85	38.10	-97.89	-1,602.52	-1,172.19	1,313.31	1,238.79	74.52	17.623	
13,300.00	11,529.00	13,481.63	11,710.00	38.07	39.33	-97.89	-1,702.52	-1,171.61	1,313.29	1,236.34	76.95	17.067	
13,400.00	11,529.00	13,581.63	11,710.00	39.31	40.59	-97.89	-1,802.52	-1,171.03	1,313.28	1,233.84	79.44	16.532	
13,500.00	11,529.00	13,681.63	11,710.00	40.58	41.88	-97.89	-1,902.52	-1,170.45	1,313.26	1,231.28	81.98	16.020	
13,600.00	11,529.00	13,781.63	11,710.00	41.88	43.19	-97.89	-2,002.52	-1,169.88	1,313.24	1,228.68	84.57	15.529	
13,700.00	11,529.00	13,881.63	11,710.00	43.20	44.53	-97.89	-2,102.52	-1,169.30	1,313.23	1,226.02	87.20	15.060	
13,800.00	11,529.00	13,981.63	11,710.00	44.54	45.88	-97.89	-2,202.51	-1,168.72	1,313.21	1,223.33	89.88	14.611	
13,900.00	11,529.00	14,081.63	11,710.00	45.90	47.25	-97.89	-2,302.51	-1,168.14	1,313.19	1,220.60	92.59	14.183	
14,000.00	11,529.00	14,181.63	11,710.00	47.28	48.64	-97.89	-2,402.51	-1,167.57	1,313.18	1,217.84	95.33	13.774	
14,100.00	11,529.00	14,281.63	11,710.00	48.67	50.04	-97.89	-2,502.51	-1,166.99	1,313.16	1,215.05	98.11	13.384	
14,200.00	11,529.00	14,381.63	11,710.00	50.08	51.46	-97.89	-2,602.51	-1,166.41	1,313.14	1,212.22	100.92	13.012	
14,300.00	11,529.00	14,481.63	11,710.00	51.51	52.89	-97.89	-2,702.51	-1,165.83	1,313.13	1,209.38	103.75	12.657	
14,400.00	11,529.00	14,581.63	11,710.00	52.94	54.33	-97.89	-2,802.50	-1,165.26	1,313.11	1,206.50	106.61	12.317	
14,500.00	11,529.00	14,681.63	11,710.00	54.39	55.78	-97.89	-2,902.50	-1,164.68	1,313.09	1,203.61	109.49	11.993	
14,600.00	11,529.00	14,781.63	11,710.00	55.85	57.25	-97.89	-3,002.50	-1,164.10	1,313.08	1,200.69	112.38	11.684	
14,700.00	11,529.00	14,881.63	11,710.00	57.31	58.72	-97.89	-3,102.50	-1,163.52	1,313.06	1,197.76	115.30	11.388	
14,800.00	11,529.00	14,981.63	11,710.00	58.79	60.20	-97.89	-3,202.50	-1,162.95	1,313.04	1,194.80	118.24	11.105	
14,900.00	11,529.00	15,081.63	11,710.00	60.28	61.69	-97.89	-3,302.50	-1,162.37	1,313.03	1,191.83	121.19	10.834	
15,000.00	11,529.00	15,181.63	11,710.00	61.77	63.19	-97.89	-3,402.49	-1,161.79	1,313.01	1,188.85	124.16	10.575	
15,100.00	11,529.00	15,281.63	11,710.00	63.27	64.69	-97.89	-3,502.49	-1,161.21	1,312.99	1,185.85	127.14	10.327	
15,200.00	11,529.00	15,381.63	11,710.00	64.78	66.20	-97.89	-3,602.49	-1,160.64	1,312.98	1,182.84	130.14	10.089	
15,300.00	11,529.00	15,481.63	11,710.00	66.29	67.72	-97.89	-3,702.49	-1,160.06	1,312.96	1,179.82	133.14	9.861	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 614H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD-HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside TooFace (")	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	-E-W (usft)					
15,400.00	11,529.00	15,581.63	11,710.00	67.81	69.24	97.89	-3,802.49	-1,159.48	1,312.94	1,176.78	136.16	9.643	
15,500.00	11,529.00	15,681.63	11,710.00	69.34	70.76	97.89	-3,902.49	-1,158.90	1,312.93	1,173.74	139.19	9.433	
15,600.00	11,529.00	15,781.63	11,710.00	70.87	72.30	97.89	-4,002.48	-1,158.33	1,312.91	1,170.68	142.23	9.231	
15,700.00	11,529.00	15,881.63	11,710.00	72.40	73.83	97.89	-4,102.48	-1,157.75	1,312.89	1,167.61	145.26	9.037	
15,800.00	11,529.00	15,981.63	11,710.00	73.94	75.37	97.89	-4,202.48	-1,157.17	1,312.88	1,164.54	148.34	8.851	
15,900.00	11,529.00	16,081.63	11,710.00	75.48	76.92	97.89	-4,302.48	-1,156.59	1,312.86	1,161.48	151.40	8.671	
16,000.00	11,529.00	16,181.63	11,710.00	77.03	78.47	97.89	-4,402.48	-1,156.02	1,312.84	1,158.37	154.47	8.499	
16,100.00	11,529.00	16,281.63	11,710.00	78.58	80.02	97.89	-4,502.48	-1,155.44	1,312.83	1,155.27	157.55	8.332	
16,200.00	11,529.00	16,381.63	11,710.00	80.14	81.58	97.89	-4,602.47	-1,154.86	1,312.81	1,152.17	160.64	8.172	
16,300.00	11,529.00	16,481.63	11,710.00	81.70	83.14	97.89	-4,702.47	-1,154.28	1,312.79	1,149.06	163.74	8.018	
16,400.00	11,529.00	16,581.63	11,710.00	83.26	84.70	97.89	-4,802.47	-1,153.71	1,312.78	1,145.94	166.84	7.869	
16,500.00	11,529.00	16,681.63	11,710.00	84.82	86.26	97.89	-4,902.47	-1,153.13	1,312.76	1,142.82	169.94	7.725	
16,600.00	11,529.00	16,781.63	11,710.00	86.39	87.83	97.89	-5,002.47	-1,152.55	1,312.74	1,139.69	173.05	7.586	
16,700.00	11,529.00	16,881.63	11,710.00	87.96	89.40	97.89	-5,102.47	-1,151.97	1,312.73	1,136.55	176.17	7.451	
16,800.00	11,529.00	16,981.63	11,710.00	89.53	90.97	97.89	-5,202.46	-1,151.40	1,312.71	1,133.42	179.29	7.322	
16,900.00	11,529.00	17,081.63	11,710.00	91.11	92.55	97.89	-5,302.46	-1,150.82	1,312.69	1,130.27	182.42	7.196	
17,000.00	11,529.00	17,181.63	11,710.00	92.68	94.13	97.89	-5,402.46	-1,150.24	1,312.68	1,127.12	185.55	7.074	
17,100.00	11,529.00	17,281.63	11,710.00	94.26	95.71	97.89	-5,502.46	-1,149.66	1,312.66	1,123.97	188.69	6.957	
17,200.00	11,529.00	17,381.63	11,710.00	95.84	97.29	97.89	-5,602.46	-1,149.09	1,312.64	1,120.82	191.82	6.843	
17,300.00	11,529.00	17,481.63	11,710.00	97.43	98.87	97.89	-5,702.46	-1,148.51	1,312.62	1,117.66	194.97	6.733	
17,400.00	11,529.00	17,581.63	11,710.00	99.01	100.46	97.89	-5,802.45	-1,147.93	1,312.61	1,114.49	198.11	6.626	
17,500.00	11,529.00	17,681.63	11,710.00	100.60	102.04	97.89	-5,902.45	-1,147.36	1,312.59	1,111.33	201.26	6.522	
17,600.00	11,529.00	17,781.63	11,710.00	102.19	103.63	97.89	-6,002.45	-1,146.78	1,312.57	1,108.18	204.42	6.421	
17,700.00	11,529.00	17,881.63	11,710.00	103.78	105.22	97.89	-6,102.45	-1,146.20	1,312.56	1,104.98	207.57	6.323	
17,800.00	11,529.00	17,981.63	11,710.00	105.37	106.82	97.89	-6,202.45	-1,145.62	1,312.54	1,101.81	210.73	6.228	
17,900.00	11,529.00	18,081.63	11,710.00	106.96	108.41	97.89	-6,302.45	-1,145.05	1,312.52	1,098.63	213.90	6.136	
18,000.00	11,529.00	18,181.63	11,710.00	108.56	110.00	97.89	-6,402.44	-1,144.47	1,312.51	1,095.45	217.06	6.047	
18,100.00	11,529.00	18,281.63	11,710.00	110.15	111.60	97.89	-6,502.44	-1,143.89	1,312.49	1,092.26	220.23	5.960	
18,200.00	11,529.00	18,381.63	11,710.00	111.75	113.20	97.89	-6,602.44	-1,143.31	1,312.47	1,089.08	223.40	5.875	
18,300.00	11,529.00	18,481.63	11,710.00	113.35	114.80	97.89	-6,702.44	-1,142.74	1,312.46	1,085.89	226.57	5.793	
18,400.00	11,529.00	18,581.63	11,710.00	114.95	116.39	97.89	-6,802.44	-1,142.16	1,312.44	1,082.69	229.75	5.713	
18,500.00	11,529.00	18,681.63	11,710.00	116.55	118.00	97.89	-6,902.44	-1,141.58	1,312.42	1,079.50	232.92	5.635	
18,600.00	11,529.00	18,781.63	11,710.00	118.15	119.60	97.89	-7,002.43	-1,141.00	1,312.41	1,076.30	236.10	5.559	
18,700.00	11,529.00	18,881.63	11,710.00	119.75	121.20	97.89	-7,102.43	-1,140.43	1,312.39	1,073.11	239.29	5.485	
18,800.00	11,529.00	18,981.63	11,710.00	121.36	122.80	97.89	-7,202.43	-1,139.85	1,312.37	1,069.91	242.47	5.413	
18,900.00	11,529.00	19,081.63	11,710.00	122.96	124.41	97.89	-7,302.43	-1,139.27	1,312.36	1,066.70	245.65	5.342	
19,000.00	11,529.00	19,181.63	11,710.00	124.57	126.01	97.89	-7,402.43	-1,138.69	1,312.34	1,063.50	248.84	5.274	
19,100.00	11,529.00	19,281.63	11,710.00	126.17	127.62	97.89	-7,502.43	-1,138.12	1,312.32	1,060.29	252.03	5.207	
19,200.00	11,529.00	19,381.63	11,710.00	127.78	129.23	97.89	-7,602.42	-1,137.54	1,312.31	1,057.09	255.22	5.142	
19,300.00	11,529.00	19,481.63	11,710.00	129.39	130.84	97.89	-7,702.42	-1,136.96	1,312.29	1,053.88	258.41	5.078	
19,400.00	11,529.00	19,581.63	11,710.00	131.00	132.45	97.89	-7,802.42	-1,136.38	1,312.27	1,050.67	261.61	5.016	
19,500.00	11,529.00	19,681.63	11,710.00	132.61	134.06	97.89	-7,902.42	-1,135.81	1,312.26	1,047.46	264.80	4.956	
19,600.00	11,529.00	19,781.63	11,710.00	134.22	135.67	97.89	-8,002.42	-1,135.23	1,312.24	1,044.24	268.00	4.896	
19,700.00	11,529.00	19,881.63	11,710.00	135.83	137.28	97.89	-8,102.42	-1,134.65	1,312.22	1,041.03	271.20	4.839	
19,800.00	11,529.00	19,981.63	11,710.00	137.44	138.89	97.89	-8,202.41	-1,134.07	1,312.21	1,037.81	274.40	4.782	
19,900.00	11,529.00	20,081.63	11,710.00	139.05	140.50	97.89	-8,302.41	-1,133.50	1,312.19	1,034.59	277.60	4.727	
20,000.00	11,529.00	20,181.63	11,710.00	140.67	142.11	97.89	-8,402.41	-1,132.92	1,312.17	1,031.38	280.80	4.673	
20,100.00	11,529.00	20,281.63	11,710.00	142.28	143.73	97.89	-8,502.41	-1,132.34	1,312.16	1,028.16	284.00	4.620	
20,200.00	11,529.00	20,381.63	11,710.00	143.90	145.34	97.89	-8,602.41	-1,131.76	1,312.14	1,024.93	287.21	4.569	
20,300.00	11,529.00	20,481.63	11,710.00	145.51	146.96	97.89	-8,702.41	-1,131.19	1,312.12	1,021.71	290.41	4.518	
20,400.00	11,529.00	20,581.63	11,710.00	147.13	148.57	97.89	-8,802.40	-1,130.61	1,312.11	1,018.49	293.62	4.469	
20,500.00	11,529.00	20,681.63	11,710.00	148.74	150.19	97.89	-8,902.40	-1,130.03	1,312.09	1,015.26	296.83	4.420	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 614H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface [°]	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
20,600.00	11,529.00	20,781.63	11,710.00	150.38	151.81	97.89	-9,002.40	-1,129.45	1,312.07	1,012.04	300.04	4.373	
20,700.00	11,529.00	20,881.63	11,710.00	151.98	153.42	97.89	-9,102.40	-1,128.88	1,312.06	1,008.81	303.25	4.327	
20,800.00	11,529.00	20,981.63	11,710.00	153.59	155.04	97.89	-9,202.40	-1,128.30	1,312.04	1,005.59	306.46	4.281	
20,900.00	11,529.00	21,081.63	11,710.00	155.21	156.66	97.89	-9,302.40	-1,127.72	1,312.02	1,002.38	309.67	4.237	
21,000.00	11,529.00	21,181.63	11,710.00	156.83	158.28	97.89	-9,402.39	-1,127.14	1,312.01	999.13	312.88	4.193	
21,100.00	11,529.00	21,281.63	11,710.00	158.45	159.90	97.89	-9,502.39	-1,126.57	1,311.99	995.90	316.09	4.151	
21,200.00	11,529.00	21,381.63	11,710.00	160.07	161.51	97.89	-9,602.39	-1,125.99	1,311.97	992.67	319.31	4.109	
21,300.00	11,529.00	21,481.63	11,710.00	161.69	163.13	97.89	-9,702.39	-1,125.41	1,311.96	989.43	322.52	4.068	
21,400.00	11,529.00	21,581.63	11,710.00	163.31	164.75	97.89	-9,802.39	-1,124.83	1,311.94	986.20	325.74	4.028	
21,452.82	11,529.00	21,634.55	11,710.00	164.16	165.61	97.89	-9,855.30	-1,124.53	1,311.93	984.49	327.44	4.007	
21,472.24	11,529.00	21,652.47	11,710.00	164.48	165.90	97.89	-9,873.22	-1,124.43	1,311.93	983.90	328.03	3.999 ES, SF	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 714H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD-HDCM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	1.30	1.30	0.00	0.00	-84.97	114.05	-1,295.26	1,300.27				
100.00	100.00	101.30	101.30	0.09	0.09	-84.97	114.05	-1,295.26	1,300.27	1,300.09	0.18	7,267.579	
200.00	200.00	201.30	201.30	0.32	0.31	-84.97	114.05	-1,295.26	1,300.27	1,299.84	0.63	2,089.028	
300.00	300.00	301.30	301.30	0.54	0.54	-84.97	114.05	-1,295.26	1,300.27	1,299.19	1.08	1,208.213	
400.00	400.00	401.30	401.30	0.77	0.76	-84.97	114.05	-1,295.26	1,300.27	1,298.74	1.53	851.238	
500.00	500.00	501.30	501.30	0.99	0.99	-84.97	114.05	-1,295.26	1,300.27	1,298.29	1.98	657.885	
600.00	600.00	601.30	601.30	1.22	1.21	-84.97	114.05	-1,295.26	1,300.27	1,297.84	2.43	535.847	
700.00	700.00	701.30	701.30	1.44	1.44	-84.97	114.05	-1,295.26	1,300.27	1,297.40	2.88	452.094	
800.00	800.00	801.30	801.30	1.67	1.66	-84.97	114.05	-1,295.26	1,300.27	1,296.95	3.33	390.984	
900.00	900.00	901.30	901.30	1.89	1.89	-84.97	114.05	-1,295.26	1,300.27	1,296.50	3.78	344.427	
1,000.00	1,000.00	1,001.30	1,001.30	2.11	2.11	-84.97	114.05	-1,295.26	1,300.27	1,296.05	4.22	307.778	
1,100.00	1,100.00	1,101.30	1,101.30	2.34	2.33	-84.97	114.05	-1,295.26	1,300.27	1,295.60	4.67	278.178	
1,200.00	1,200.00	1,201.30	1,201.30	2.56	2.56	-84.97	114.05	-1,295.26	1,300.27	1,295.15	5.12	253.773	
1,300.00	1,300.00	1,301.30	1,301.30	2.79	2.78	-84.97	114.05	-1,295.26	1,300.27	1,294.70	5.57	233.304	
1,400.00	1,400.00	1,401.30	1,401.30	3.01	3.01	-84.97	114.05	-1,295.26	1,300.27	1,294.25	6.02	215.890	
1,500.00	1,500.00	1,501.30	1,501.30	3.24	3.23	-84.97	114.05	-1,295.26	1,300.27	1,293.80	6.47	200.896	
1,600.00	1,600.00	1,601.30	1,601.30	3.48	3.48	-84.97	114.05	-1,295.26	1,300.27	1,293.35	6.92	187.849	
1,700.00	1,700.00	1,701.30	1,701.30	3.69	3.68	-84.97	114.05	-1,295.26	1,300.27	1,292.90	7.37	176.393	
1,800.00	1,800.00	1,801.30	1,801.30	3.91	3.91	-84.97	114.05	-1,295.26	1,300.27	1,292.45	7.82	168.255	
1,900.00	1,900.00	1,901.30	1,901.30	4.14	4.13	-84.97	114.05	-1,295.26	1,300.27	1,292.00	8.27	157.218	
2,000.00	2,000.00	2,001.30	2,001.30	4.38	4.38	-84.97	114.05	-1,295.26	1,300.27	1,291.55	8.72	149.113	
2,100.00	2,100.00	2,101.30	2,101.30	4.59	4.58	-84.97	114.05	-1,295.26	1,300.27	1,291.10	9.17	141.803	
2,200.00	2,200.00	2,201.30	2,201.30	4.81	4.81	-84.97	114.05	-1,295.26	1,300.27	1,290.65	9.62	135.176	
2,300.00	2,300.00	2,301.30	2,301.30	5.04	5.03	-84.97	114.05	-1,295.26	1,300.27	1,290.20	10.07	129.141	
2,400.00	2,400.00	2,401.30	2,401.30	5.28	5.28	-84.97	114.05	-1,295.26	1,300.27	1,289.75	10.52	123.622	
2,500.00	2,500.00	2,501.30	2,501.30	5.49	5.48	-84.97	114.05	-1,295.26	1,300.27	1,289.30	10.97	118.555	
2,600.00	2,600.00	2,601.30	2,601.30	5.71	5.71	-84.97	114.05	-1,295.26	1,300.27	1,288.85	11.42	113.887	
2,700.00	2,700.00	2,701.30	2,701.30	5.94	5.93	-84.97	114.05	-1,295.26	1,300.27	1,288.40	11.87	109.573	
2,800.00	2,800.00	2,801.30	2,801.30	6.18	6.18	-84.97	114.05	-1,295.26	1,300.27	1,287.96	12.32	105.573	
2,900.00	2,900.00	2,901.30	2,901.30	6.39	6.38	-84.97	114.05	-1,295.26	1,300.27	1,287.51	12.77	101.856	
3,000.00	3,000.00	3,001.85	3,001.85	6.61	6.61	-84.97	114.05	-1,295.26	1,300.27	1,287.06	13.22	98.388	
3,100.00	3,100.00	3,128.32	3,128.31	6.83	6.88	-84.94	114.48	-1,293.88	1,299.22	1,285.51	13.71	94.788	
3,200.00	3,200.00	3,254.88	3,254.78	7.06	7.14	-84.87	115.89	-1,289.83	1,298.12	1,281.93	14.18	91.384	
3,300.00	3,300.00	3,381.16	3,380.88	7.28	7.40	-84.76	117.71	-1,283.13	1,290.97	1,276.31	14.65	88.093	
3,400.00	3,400.00	3,507.09	3,508.42	7.51	7.67	-84.59	120.53	-1,273.79	1,283.79	1,268.67	15.12	84.901	
3,500.00	3,500.00	3,613.89	3,612.76	7.73	7.91	-84.42	123.41	-1,264.23	1,275.12	1,259.58	15.58	81.935	
3,600.00	3,600.00	3,713.44	3,711.87	7.96	8.13	-84.26	126.13	-1,255.23	1,266.39	1,250.39	16.00	79.161	
3,700.00	3,700.00	3,813.00	3,810.98	8.18	8.35	-84.10	128.84	-1,246.23	1,257.66	1,241.23	16.43	76.528	
3,800.00	3,800.00	3,912.55	3,910.08	8.41	8.58	-83.93	131.56	-1,237.23	1,248.95	1,232.07	16.87	74.026	
3,900.00	3,900.00	4,012.10	4,009.19	8.63	8.81	-83.76	134.27	-1,228.22	1,240.24	1,222.93	17.31	71.645	
4,000.00	4,000.00	4,111.65	4,108.30	8.86	9.04	-83.59	136.99	-1,219.22	1,231.55	1,213.80	17.75	69.378	
4,100.00	4,100.00	4,211.21	4,207.41	9.08	9.28	-83.42	139.70	-1,210.22	1,222.87	1,204.87	18.19	67.218	
4,200.00	4,200.00	4,310.76	4,306.51	9.31	9.51	-83.24	142.42	-1,201.21	1,214.19	1,195.56	18.64	65.156	
4,300.00	4,300.00	4,410.31	4,405.82	9.53	9.75	-83.06	145.14	-1,192.21	1,205.53	1,186.48	19.08	63.187	
4,400.00	4,400.00	4,509.87	4,504.73	9.76	9.99	-82.88	147.85	-1,183.21	1,196.89	1,177.38	19.52	61.305	
4,500.00	4,500.00	4,609.42	4,603.84	9.98	10.23	-82.69	150.57	-1,174.21	1,188.25	1,168.28	19.97	59.505	
4,600.00	4,600.00	4,708.97	4,702.95	10.21	10.47	-82.51	153.28	-1,165.20	1,179.63	1,159.21	20.42	57.782	
4,700.00	4,700.00	4,808.52	4,802.05	10.43	10.71	-82.32	156.00	-1,156.20	1,171.02	1,150.18	20.86	56.130	
4,800.00	4,800.00	4,908.08	4,901.16	10.66	10.96	-82.12	158.71	-1,147.20	1,162.42	1,141.11	21.31	54.547	
4,900.00	4,900.00	5,007.63	5,000.27	10.88	11.20	-81.93	161.43	-1,138.19	1,153.84	1,132.08	21.76	53.027	
5,000.00	5,000.00	5,107.18	5,099.38	11.11	11.45	-81.73	164.15	-1,129.19	1,145.27	1,123.08	22.21	51.568	
5,100.00	5,100.00	5,206.78	5,198.53	11.33	11.70	-81.52	166.86	-1,120.18	1,136.90	1,114.24	22.66	50.177	

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

LEAM Drilling Services Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference:
TVD Reference: 3474' GE + 25 KB @ 3499.00usft
MD Reference: 3474' GE + 25 KB @ 3499.00usft
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design		Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 714H - OH - Plan #3										Offset Well Error:		0.00 usft	
Survey Program: O-LEAM MWD-HIDCM												Offset Well Error:		0.00 usft	
Reference		Offset		Semi-Major Axis		Distance		Between Centres		Minimum Separation		Warning			
Measured Depth (unit)	Vertical Depth (unit)	Measured Depth (unit)	Vertical Depth (unit)	Reference (unit)	Offset (unit)	Height Difference (unit)	Offset Wellbore Centre (unit)	Between Centres (unit)	Ellipses (unit)	Minimum Separation (unit)	Separation Factor				
5,200.00	5,199.96	5,306.45	5,297.75	11.55	11.95	-102.50	189.36	-1,111.17	1,128.91	1,105.80	23.11	48.859			
5,300.00	5,299.96	5,406.16	5,397.02	11.76	12.20	-102.50	172.30	-1,102.15	1,121.30	1,097.75	23.55	47.806			
5,400.00	5,399.96	5,505.68	5,496.29	12.00	12.45	-102.75	175.02	-1,093.14	1,114.07	1,090.07	24.00	46.420			
5,500.00	5,499.41	5,605.56	5,595.55	12.22	12.70	-102.93	177.74	-1,084.12	1,107.12	1,082.87	24.45	45.285			
5,600.00	5,599.13	5,705.29	5,694.81	12.45	12.95	-103.10	180.46	-1,075.10	1,100.18	1,075.29	24.90	44.180			
5,700.00	5,698.99	5,805.00	5,794.07	12.67	13.20	-103.27	183.18	-1,066.09	1,093.26	1,067.91	25.35	43.131			
5,800.00	5,798.59	5,904.70	5,893.33	12.89	13.46	-103.44	185.90	-1,057.07	1,086.35	1,060.55	25.80	42.108			
5,900.00	5,898.31	6,004.41	5,992.59	13.12	13.71	-103.62	188.62	-1,048.05	1,078.44	1,053.19	26.25	41.118			
6,000.00	5,998.04	6,104.12	6,091.85	13.35	13.96	-103.80	191.34	-1,039.03	1,072.55	1,045.84	26.71	40.161			
6,100.00	6,097.77	6,203.83	6,191.12	13.57	14.22	-103.98	194.06	-1,030.02	1,065.67	1,038.51	27.16	39.235			
6,200.00	6,197.50	6,303.53	6,290.36	13.80	14.48	-104.16	196.78	-1,021.00	1,058.90	1,031.16	27.62	38.339			
6,300.00	6,297.22	6,403.24	6,389.64	14.03	14.73	-104.34	199.50	-1,011.98	1,051.83	1,023.86	28.07	37.470			
6,400.00	6,396.95	6,502.95	6,488.90	14.26	14.99	-104.53	202.22	-1,002.87	1,045.06	1,016.55	28.53	36.629			
6,500.00	6,496.68	6,602.65	6,588.16	14.49	15.25	-104.72	204.94	-993.85	1,038.24	1,009.26	28.99	35.814			
6,600.00	6,596.40	6,702.36	6,687.42	14.72	15.50	-104.91	207.66	-984.83	1,031.42	1,001.97	29.45	35.024			
6,700.00	6,696.13	6,802.07	6,786.68	14.96	15.76	-105.10	210.38	-975.82	1,024.60	994.69	29.91	34.256			
6,800.00	6,795.86	6,901.77	6,885.94	15.19	16.02	-105.30	213.10	-966.80	1,017.80	987.43	30.37	33.514			
6,900.00	6,895.58	7,001.48	6,985.20	15.42	16.28	-105.50	215.82	-957.88	1,011.00	980.17	30.83	32.793			
7,000.00	6,995.31	7,101.19	7,084.47	15.66	16.54	-105.70	218.54	-948.87	1,004.22	972.83	31.29	32.092			
7,100.00	7,095.04	7,200.89	7,183.73	15.89	16.80	-105.90	221.26	-939.85	997.46	965.70	31.75	31.412			
7,200.00	7,194.77	7,300.60	7,282.99	16.12	17.06	-106.11	223.98	-930.83	990.70	958.49	32.22	30.752			
7,300.00	7,294.49	7,400.31	7,382.25	16.36	17.32	-106.32	226.70	-921.82	983.96	951.28	32.68	30.110			
7,400.00	7,394.22	7,500.02	7,481.51	16.60	17.58	-106.53	229.42	-912.80	977.23	944.09	33.14	29.485			
7,500.00	7,493.95	7,599.72	7,580.77	16.83	17.84	-106.75	232.14	-903.78	970.52	936.91	33.61	28.879			
7,600.00	7,593.67	7,699.43	7,680.03	17.07	18.10	-106.97	234.86	-894.77	963.82	929.75	34.07	28.289			
7,700.00	7,693.40	7,799.14	7,779.28	17.31	18.36	-107.18	237.58	-885.75	957.13	922.60	34.54	27.715			
7,800.00	7,793.13	7,898.84	7,878.56	17.54	18.62	-107.42	240.30	-876.73	950.46	915.46	35.00	27.156			
7,900.00	7,892.86	7,998.55	7,978.28	17.78	18.88	-107.65	243.02	-867.72	943.80	908.34	35.47	26.612			
8,000.00	7,992.58	8,098.26	8,077.08	18.02	19.14	-107.88	245.74	-858.70	937.16	901.23	35.93	26.082			
8,100.00	8,092.31	8,197.96	8,176.34	18.26	19.41	-108.11	248.46	-849.68	930.54	894.14	36.40	25.587			
8,200.00	8,192.04	8,297.67	8,275.60	18.50	19.67	-108.35	251.18	-840.67	923.93	887.08	36.86	25.064			
8,300.00	8,291.76	8,397.38	8,374.86	18.73	19.93	-108.59	253.90	-831.65	917.33	880.00	37.33	24.575			
8,400.00	8,391.49	8,497.08	8,474.12	18.97	20.19	-108.84	256.62	-822.63	910.75	872.86	37.79	24.098			
8,500.00	8,491.22	8,596.78	8,573.36	19.21	20.46	-109.09	259.34	-813.61	904.19	865.83	38.26	23.632			
8,600.00	8,590.95	8,696.50	8,672.64	19.45	20.72	-109.34	262.06	-804.60	897.65	858.82	38.73	23.179			
8,700.00	8,690.67	8,796.21	8,771.91	19.69	20.98	-109.59	264.78	-795.58	891.12	851.93	39.19	22.736			
8,800.00	8,790.40	8,895.91	8,871.17	19.93	21.25	-109.85	267.50	-786.56	884.62	844.95	39.66	22.305			
8,900.00	8,890.13	8,995.62	8,970.43	20.18	21.51	-110.12	270.22	-777.55	878.13	838.00	40.13	21.883			
9,000.00	8,989.85	9,095.33	9,069.69	20.42	21.77	-110.39	272.94	-768.53	871.66	831.06	40.59	21.472			
9,100.00	9,089.58	9,195.03	9,168.95	20.66	22.04	-110.66	275.66	-759.51	865.20	824.14	41.06	21.071			
9,200.00	9,189.31	9,294.74	9,268.21	20.90	22.30	-110.93	278.38	-750.50	858.77	817.24	41.53	20.679			
9,300.00	9,289.03	9,394.45	9,367.47	21.14	22.56	-111.21	281.10	-741.48	852.36	810.37	42.00	20.298			
9,400.00	9,388.76	9,494.16	9,466.73	21.38	22.83	-111.50	283.82	-732.46	845.97	803.51	42.46	19.923			
9,500.00	9,488.49	9,593.86	9,565.98	21.62	23.09	-111.78	286.54	-723.45	839.60	796.67	42.93	19.556			
9,600.00	9,588.28	9,693.56	9,665.27	21.81	23.36	-111.95	289.26	-714.43	833.87	789.53	43.34	19.217			
9,700.00	9,688.18	9,793.29	9,764.53	21.99	23.62	-112.00	291.98	-705.41	828.51	781.76	43.75	18.860			
9,800.00	9,788.13	9,892.97	9,863.78	22.17	23.89	-111.83	294.70	-696.40	817.49	773.33	44.16	18.512			
9,900.00	9,888.12	9,992.56	9,962.83	22.34	24.15	-111.73	297.42	-687.39	808.63	764.26	44.57	18.149			
10,000.00	9,988.12	10,092.13	10,062.04	22.53	24.42	-90.71	300.14	-678.39	799.75	754.76	44.99	17.775			
10,100.00	10,088.12	10,191.69	10,161.15	22.75	24.68	-90.52	302.85	-669.38	790.66	745.23	45.45	17.397			
10,200.00	10,188.12	10,291.24	10,260.25	22.96	24.94	-90.33	305.57	-660.38	781.61	735.71	45.90	17.027			
10,300.00	10,288.12	10,390.21	10,353.82	23.18	25.19	-90.14	308.08	-652.04	772.73	726.39	46.35	16.672			

LEAM Drilling Services
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference:
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design		Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 714H - OH - Plan #3										Offset Size Error:	
Survey Program:		0-LEAM MW-D-HDDM										Offset Well Error:	
Reference		Offset		Serial Master Axis		Distance		Warning		0.00 usft			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Footcage (')	Offset Wellbore Centre +H/S (usft)	+E/W (usft)	Between Centres (usft)	Edgewise Separation (usft)	Minimum Separation (usft)	Separation Factor	
10,400.00	10,388.12	10,473.54	10,441.87	23.40	25.36	-89.89	310.11	-645.53	765.13	718.37	46.76	18.363	
10,500.00	10,488.12	10,562.07	10,530.22	23.82	25.53	-89.87	311.74	-639.82	759.02	711.86	47.16	18.094	
10,600.00	10,588.12	10,650.75	10,618.78	23.84	25.70	-89.77	312.98	-635.81	754.39	706.83	47.55	15.884	
10,700.00	10,688.12	10,739.54	10,707.54	24.06	25.85	-89.71	313.83	-633.00	751.23	703.30	47.94	15.672	
10,800.00	10,788.12	10,828.40	10,796.38	24.28	26.01	-89.67	314.27	-631.52	749.56	701.25	48.31	15.515	
10,889.18	10,877.29	10,910.81	10,878.59	24.47	26.15	-89.67	314.35	-631.26	749.27	700.82	48.65	15.400	
10,900.00	10,888.12	10,921.44	10,889.42	24.49	26.17	-89.67	314.35	-631.26	749.27	700.57	48.70	15.388 CC	
10,900.44	10,888.56	10,921.88	10,889.66	24.50	26.17	-89.65	314.35	-631.26	749.27	700.57	48.70	15.385	
11,000.00	10,988.11	11,021.43	10,989.41	24.70	26.37	-90.72	314.35	-631.26	749.28	700.17	49.12	15.255	
11,100.00	11,088.06	11,120.28	11,089.28	24.83	26.56	-91.76	314.35	-631.26	749.60	700.12	49.48	15.151	
11,200.00	11,181.83	11,213.15	11,183.13	24.92	26.75	-93.85	314.35	-631.26	751.23	701.42	49.81	15.062	
11,300.00	11,288.84	11,303.16	11,271.14	24.98	26.82	-96.51	314.35	-631.26	756.15	706.02	50.13	15.003	
11,400.00	11,388.32	11,381.64	11,349.62	25.02	27.06	-99.06	314.35	-631.26	766.84	716.48	50.48	15.199	
11,500.00	11,414.88	11,482.56	11,450.88	25.06	27.26	-102.90	304.11	-631.20	784.40	733.80	50.80	15.441	
11,600.00	11,487.49	11,634.63	11,594.70	25.10	27.43	-107.33	280.43	-630.98	806.06	755.24	50.82	15.863	
11,700.00	11,504.57	11,628.23	11,753.04	25.27	27.62	-112.45	150.64	-630.35	828.30	778.17	50.13	16.623	
11,800.00	11,524.98	12,096.32	11,884.51	25.51	27.95	-116.82	-74.20	-629.09	844.17	794.87	49.30	17.123	
11,900.00	11,529.00	12,324.67	11,925.00	25.82	28.59	-117.78	-299.21	-627.84	846.85	796.58	50.27	16.847	
12,000.00	11,529.00	12,424.67	11,925.00	26.23	29.02	-117.78	-399.21	-627.28	846.85	795.74	51.11	16.570	
12,100.00	11,529.00	12,524.67	11,925.00	26.72	29.54	-117.78	-499.21	-626.72	846.85	794.75	52.10	16.253	
12,200.00	11,529.00	12,624.67	11,925.00	27.31	30.15	-117.78	-609.21	-626.16	846.86	793.80	53.25	15.903	
12,300.00	11,529.00	12,724.67	11,925.00	27.88	30.84	-117.78	-699.20	-625.61	846.86	792.32	54.54	15.528	
12,400.00	11,529.00	12,824.67	11,925.00	28.73	31.59	-117.78	-799.20	-625.05	846.86	790.81	55.95	15.135	
12,500.00	11,529.00	12,924.67	11,925.00	29.55	32.41	-117.78	-899.20	-624.49	846.86	789.37	57.49	14.731	
12,600.00	11,529.00	13,024.67	11,925.00	30.44	33.30	-117.78	-999.20	-623.93	846.87	787.73	59.14	14.321	
12,700.00	11,529.00	13,124.67	11,925.00	31.38	34.24	-117.78	-1,099.20	-623.38	846.87	785.98	60.88	13.910	
12,800.00	11,529.00	13,224.67	11,925.00	32.38	35.23	-117.78	-1,199.20	-622.82	846.87	784.15	62.73	13.501	
12,900.00	11,529.00	13,324.67	11,925.00	33.44	36.27	-117.78	-1,299.20	-622.26	846.87	782.22	64.65	13.089	
13,000.00	11,529.00	13,424.67	11,925.00	34.54	37.35	-117.78	-1,399.19	-621.70	846.88	780.27	66.66	12.705	
13,100.00	11,529.00	13,524.67	11,925.00	35.68	38.48	-117.78	-1,499.19	-621.15	846.88	778.14	68.73	12.321	
13,200.00	11,529.00	13,624.67	11,925.00	36.85	39.63	-117.78	-1,599.18	-620.59	846.88	776.01	70.88	11.949	
13,300.00	11,529.00	13,724.67	11,925.00	38.07	40.83	-117.78	-1,699.18	-620.03	846.88	773.81	73.06	11.589	
13,400.00	11,529.00	13,824.67	11,925.00	39.31	42.05	-117.78	-1,799.18	-619.47	846.89	771.56	75.33	11.242	
13,500.00	11,529.00	13,924.67	11,925.00	40.58	43.30	-117.78	-1,899.18	-618.91	846.89	769.26	77.63	10.909	
13,600.00	11,529.00	14,024.67	11,925.00	41.88	44.57	-117.78	-1,999.18	-618.36	846.89	766.91	79.98	10.589	
13,700.00	11,529.00	14,124.67	11,925.00	43.20	45.87	-117.78	-2,099.18	-617.80	846.89	764.52	82.37	10.282	
13,800.00	11,529.00	14,224.67	11,925.00	44.54	47.18	-117.78	-2,199.18	-617.24	846.90	762.10	84.80	9.987	
13,900.00	11,529.00	14,324.67	11,925.00	45.90	48.53	-117.78	-2,299.18	-616.68	846.90	759.64	87.26	9.706	
14,000.00	11,529.00	14,424.67	11,925.00	47.28	49.88	-117.78	-2,399.18	-616.13	846.90	757.15	89.75	9.436	
14,100.00	11,529.00	14,524.67	11,925.00	48.67	51.26	-117.78	-2,499.18	-615.57	846.90	754.63	92.27	9.178	
14,200.00	11,529.00	14,624.67	11,925.00	50.08	52.64	-117.78	-2,599.18	-615.01	846.91	752.08	94.82	8.931	
14,300.00	11,529.00	14,724.67	11,925.00	51.51	54.05	-117.78	-2,699.17	-614.45	846.91	749.51	97.40	8.685	
14,400.00	11,529.00	14,824.67	11,925.00	52.94	55.46	-117.78	-2,799.17	-613.89	846.91	746.82	99.99	8.470	
14,500.00	11,529.00	14,924.67	11,925.00	54.38	56.89	-117.78	-2,899.17	-613.34	846.91	744.30	102.81	8.264	
14,600.00	11,529.00	15,024.67	11,925.00	55.85	58.33	-117.78	-2,999.17	-612.78	846.92	741.87	105.25	8.047	
14,700.00	11,529.00	15,124.67	11,925.00	57.31	59.78	-117.78	-3,099.17	-612.22	846.92	739.02	107.90	7.849	
14,800.00	11,529.00	15,224.67	11,925.00	58.79	61.24	-117.78	-3,199.17	-611.66	846.92	736.35	110.57	7.659	
14,900.00	11,529.00	15,324.67	11,925.00	60.28	62.70	-117.78	-3,299.16	-611.11	846.92	733.86	113.26	7.478	
15,000.00	11,529.00	15,424.67	11,925.00	61.77	64.18	-117.78	-3,399.16	-610.55	846.93	731.96	115.96	7.303	
15,100.00	11,529.00	15,524.67	11,925.00	63.27	65.66	-117.78	-3,499.16	-609.99	846.93	729.25	118.68	7.136	
15,200.00	11,529.00	15,624.67	11,925.00	64.78	67.16	-117.78	-3,599.16	-609.43	846.93	725.53	121.41	6.978	
15,300.00	11,529.00	15,724.67	11,925.00	66.29	68.65	-117.78	-3,699.16	-608.86	846.93	722.79	124.14	6.822	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 714H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre -N-S (usft)	-E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	11,529.00	15,824.67	11,825.00	87.81	70.16	117.78	-3,799.16	-608.32	848.94	720.04	126.89	6.674	
15,500.00	11,529.00	15,824.67	11,825.00	89.34	71.87	117.78	-3,809.15	-607.76	848.94	717.28	129.86	6.532	
15,600.00	11,529.00	15,824.67	11,825.00	70.87	73.18	117.78	-3,999.15	-607.20	848.94	714.52	132.43	6.396	
15,700.00	11,529.00	15,824.67	11,825.00	72.40	74.70	117.78	-4,099.15	-606.64	848.95	711.74	135.20	6.264	
15,800.00	11,529.00	15,824.67	11,825.00	73.94	76.23	117.78	-4,199.15	-606.09	848.95	708.98	137.99	6.138	
15,900.00	11,529.00	15,824.67	11,825.00	75.48	77.76	117.78	-4,299.15	-605.53	848.95	706.16	140.79	6.016	
16,000.00	11,529.00	15,824.67	11,825.00	77.03	79.30	117.78	-4,399.15	-604.97	848.95	703.38	143.59	5.898	
16,100.00	11,529.00	15,824.67	11,825.00	78.58	80.84	117.78	-4,499.15	-604.41	848.96	700.55	146.40	5.785	
16,200.00	11,529.00	15,824.67	11,825.00	80.14	82.38	117.78	-4,599.14	-603.86	848.96	697.74	149.22	5.678	
16,300.00	11,529.00	15,824.67	11,825.00	81.70	83.93	117.78	-4,699.14	-603.30	848.96	694.92	152.04	5.571	
16,400.00	11,529.00	15,824.67	11,825.00	83.26	85.48	117.78	-4,799.14	-602.74	848.96	692.09	154.87	5.469	
16,500.00	11,529.00	15,824.67	11,825.00	84.82	87.03	117.78	-4,899.14	-602.18	848.97	689.26	157.71	5.371	
16,600.00	11,529.00	15,824.67	11,825.00	86.39	88.59	117.78	-4,999.14	-601.63	848.97	686.42	160.55	5.276	
16,700.00	11,529.00	15,824.67	11,825.00	87.96	90.14	117.78	-5,099.14	-601.07	848.97	683.58	163.39	5.184	
16,800.00	11,529.00	15,824.67	11,825.00	89.53	91.71	117.78	-5,199.13	-600.51	848.97	680.73	166.24	5.095	
16,900.00	11,529.00	15,824.67	11,825.00	91.11	93.27	117.78	-5,299.13	-599.95	848.98	677.88	169.10	5.009	
17,000.00	11,529.00	15,824.67	11,825.00	92.68	94.84	117.78	-5,399.13	-599.39	848.98	675.02	171.96	4.928	
17,100.00	11,529.00	15,824.67	11,825.00	94.26	96.41	117.78	-5,499.13	-598.84	848.98	672.16	174.82	4.845	
17,200.00	11,529.00	15,824.68	11,825.00	95.84	97.98	117.78	-5,599.13	-598.28	848.98	669.30	177.69	4.767	
17,300.00	11,529.00	15,824.68	11,825.00	97.43	99.56	117.78	-5,699.13	-597.72	848.99	666.43	180.56	4.691	
17,400.00	11,529.00	15,824.68	11,825.00	99.01	101.13	117.78	-5,799.13	-597.16	848.99	663.56	183.43	4.617	
17,500.00	11,529.00	15,824.68	11,825.00	100.60	102.71	117.78	-5,899.12	-596.61	848.99	660.68	186.31	4.546	
17,600.00	11,529.00	15,824.68	11,825.00	102.19	104.29	117.78	-5,999.12	-596.05	848.99	657.80	189.19	4.477	
17,700.00	11,529.00	15,824.68	11,825.00	103.78	105.87	117.77	-6,099.12	-595.49	847.00	654.92	192.07	4.410	
17,800.00	11,529.00	15,824.68	11,825.00	105.37	107.46	117.77	-6,199.12	-594.93	847.00	652.04	194.96	4.344	
17,900.00	11,529.00	15,824.68	11,825.00	106.96	109.04	117.77	-6,299.12	-594.37	847.00	649.15	197.85	4.281	
18,000.00	11,529.00	15,824.68	11,825.00	108.58	110.63	117.77	-6,399.12	-593.82	847.00	646.28	200.74	4.219	
18,100.00	11,529.00	15,824.68	11,825.00	110.15	112.22	117.77	-6,499.11	-593.26	847.01	643.37	203.64	4.159	
18,200.00	11,529.00	15,824.68	11,825.00	111.75	113.81	117.77	-6,599.11	-592.70	847.01	640.47	206.54	4.101	
18,300.00	11,529.00	15,824.68	11,825.00	113.35	115.40	117.77	-6,699.11	-592.14	847.01	637.57	209.44	4.044	
18,400.00	11,529.00	15,824.68	11,825.00	114.95	116.99	117.77	-6,799.11	-591.59	847.01	634.67	212.34	3.989	
18,500.00	11,529.00	15,824.68	11,825.00	116.55	118.58	117.77	-6,899.11	-591.03	847.02	631.77	215.24	3.935	
18,600.00	11,529.00	15,824.68	11,825.00	118.15	120.18	117.77	-6,999.11	-590.47	847.02	628.87	218.15	3.883	
18,700.00	11,529.00	15,824.68	11,825.00	119.75	121.78	117.77	-7,099.11	-589.91	847.02	625.96	221.06	3.832	
18,800.00	11,529.00	15,824.68	11,825.00	121.36	123.38	117.77	-7,199.10	-589.36	847.02	623.05	223.97	3.782	
18,900.00	11,529.00	15,824.68	11,825.00	122.96	124.98	117.77	-7,299.10	-588.80	847.03	620.14	226.88	3.733	
19,000.00	11,529.00	15,824.68	11,825.00	124.57	126.58	117.77	-7,399.10	-588.24	847.03	617.23	229.80	3.686	
19,100.00	11,529.00	15,824.68	11,825.00	126.17	128.18	117.77	-7,499.10	-587.68	847.03	614.32	232.71	3.640	
19,200.00	11,529.00	15,824.68	11,825.00	127.78	129.78	117.77	-7,599.10	-587.12	847.03	611.40	235.63	3.595	
19,300.00	11,529.00	15,824.68	11,825.00	129.39	131.38	117.77	-7,699.10	-586.57	847.04	608.49	238.55	3.551	
19,400.00	11,529.00	15,824.68	11,825.00	131.00	132.99	117.77	-7,799.09	-586.01	847.04	605.57	241.47	3.508	
19,500.00	11,529.00	15,824.68	11,825.00	132.61	134.59	117.77	-7,899.09	-585.45	847.04	602.65	244.40	3.466	
19,600.00	11,529.00	15,824.68	11,825.00	134.22	136.20	117.77	-7,999.09	-584.89	847.04	599.73	247.32	3.425	
19,700.00	11,529.00	15,824.68	11,825.00	135.83	137.80	117.77	-8,099.09	-584.34	847.05	596.80	250.24	3.385	
19,800.00	11,529.00	15,824.68	11,825.00	137.44	139.41	117.77	-8,199.09	-583.78	847.05	593.88	253.17	3.346	
19,900.00	11,529.00	15,824.68	11,825.00	139.05	141.02	117.77	-8,299.09	-583.22	847.05	590.95	256.10	3.308	
20,000.00	11,529.00	15,824.68	11,825.00	140.67	142.63	117.77	-8,399.09	-582.66	847.06	588.03	259.03	3.270	
20,100.00	11,529.00	15,824.68	11,825.00	142.28	144.24	117.77	-8,499.08	-582.10	847.06	585.10	261.96	3.234	
20,200.00	11,529.00	15,824.68	11,825.00	143.90	145.85	117.77	-8,599.08	-581.55	847.06	582.17	264.89	3.198	
20,300.00	11,529.00	15,824.68	11,825.00	145.51	147.46	117.77	-8,699.08	-580.99	847.06	579.24	267.82	3.163	
20,400.00	11,529.00	15,824.68	11,825.00	147.13	149.07	117.77	-8,799.08	-580.43	847.07	576.31	270.76	3.129	
20,500.00	11,529.00	15,824.68	11,825.00	148.74	150.68	117.77	-8,899.08	-579.87	847.07	573.38	273.69	3.095	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 714H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre - N-S (usft)	Offset Wellbore Centre - E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
20,600.00	11,529.00	21,024.68	11,925.00	150.36	152.29	117.77	-8,999.08	-579.32	847.07	579.44	278.83	3.062	
20,700.00	11,529.00	21,124.88	11,925.00	151.98	153.91	117.77	-8,999.07	-578.78	847.07	587.51	279.58	3.030	
20,800.00	11,529.00	21,224.88	11,925.00	153.59	155.52	117.77	-8,999.07	-578.20	847.08	584.57	282.50	2.988	
20,900.00	11,529.00	21,324.68	11,925.00	155.21	157.13	117.77	-8,999.07	-577.64	847.08	581.84	285.44	2.968	
21,000.00	11,529.00	21,424.68	11,925.00	156.83	158.75	117.77	-8,999.07	-577.09	847.08	558.70	288.38	2.937	
21,100.00	11,529.00	21,524.68	11,925.00	158.45	160.36	117.77	-8,999.07	-576.53	847.08	555.78	291.32	2.908	
21,200.00	11,529.00	21,624.68	11,925.00	160.07	161.98	117.77	-8,999.07	-575.97	847.09	552.82	294.26	2.879	
21,300.00	11,529.00	21,724.68	11,925.00	161.69	163.60	117.77	-8,999.08	-575.41	847.09	549.88	297.20	2.850	
21,400.00	11,529.00	21,824.68	11,925.00	163.31	165.21	117.77	-8,999.08	-574.85	847.09	546.94	300.15	2.822	
21,406.97	11,529.00	21,831.65	11,925.00	163.42	165.32	117.77	-8,806.03	-574.82	847.09	546.74	300.35	2.820	
21,472.24	11,529.00	21,895.37	11,925.00	164.48	166.36	117.77	-8,869.76	-574.45	847.09	544.87	302.23	2.803 ES SF	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3499.00usft
MD Reference: 3474' GE + 25' KB @ 3499.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 718H - OH - Plan #4													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HIDGM													Offset Well Error:	0.00 usft
Reference		Offset		Serial Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre -N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	4.90	4.90	0.00	0.00	89.77	0.12	30.14	30.14					
100.00	100.00	104.90	104.90	0.09	0.10	89.77	0.12	30.14	30.14	29.94	0.20	154.133		
200.00	200.00	204.90	204.90	0.32	0.33	89.77	0.12	30.14	30.14	29.50	0.65	46.723		
300.00	300.00	304.90	304.90	0.54	0.55	89.77	0.12	30.14	30.14	29.05	1.09	27.535		
400.00	400.00	404.90	404.90	0.77	0.78	89.77	0.12	30.14	30.14	28.60	1.54	19.519		
500.00	500.00	504.90	504.90	0.99	1.00	89.77	0.12	30.14	30.14	28.15	1.99	15.118		
600.00	600.00	604.90	604.90	1.22	1.23	89.77	0.12	30.14	30.14	27.70	2.44	12.336		
700.00	700.00	704.90	704.90	1.44	1.45	89.77	0.12	30.14	30.14	27.25	2.89	10.419		
800.00	800.00	804.90	804.90	1.67	1.68	89.77	0.12	30.14	30.14	26.80	3.34	9.018		
900.00	900.00	904.90	904.90	1.89	1.90	89.77	0.12	30.14	30.14	26.35	3.79	7.949		
1,000.00	1,000.00	1,004.90	1,004.90	2.11	2.13	89.77	0.12	30.14	30.14	25.90	4.24	7.106		
1,100.00	1,100.00	1,104.90	1,104.90	2.34	2.35	89.77	0.12	30.14	30.14	25.45	4.69	6.425		
1,200.00	1,200.00	1,204.90	1,204.90	2.56	2.58	89.77	0.12	30.14	30.14	25.00	5.14	5.863		
1,300.00	1,300.00	1,304.90	1,304.90	2.79	2.80	89.77	0.12	30.14	30.14	24.55	5.59	5.392		
1,400.00	1,400.00	1,404.90	1,404.90	3.01	3.03	89.77	0.12	30.14	30.14	24.10	6.04	4.991		
1,500.00	1,500.00	1,504.90	1,504.90	3.24	3.25	89.77	0.12	30.14	30.14	23.65	6.49	4.645		
1,600.00	1,600.00	1,604.90	1,604.90	3.46	3.48	89.77	0.12	30.14	30.14	23.20	6.94	4.344		
1,700.00	1,700.00	1,704.90	1,704.90	3.69	3.70	89.77	0.12	30.14	30.14	22.75	7.39	4.080		
1,800.00	1,800.00	1,804.90	1,804.90	3.91	3.92	89.77	0.12	30.14	30.14	22.30	7.84	3.846		
1,900.00	1,900.00	1,904.90	1,904.90	4.14	4.15	89.77	0.12	30.14	30.14	21.85	8.29	3.637		
2,000.00	2,000.00	2,004.90	2,004.90	4.36	4.37	89.77	0.12	30.14	30.14	21.40	8.74	3.450		
2,100.00	2,100.00	2,104.90	2,104.90	4.59	4.60	89.77	0.12	30.14	30.14	20.95	9.19	3.281		
2,200.00	2,200.00	2,204.90	2,204.90	4.81	4.82	89.77	0.12	30.14	30.14	20.50	9.64	3.129		
2,300.00	2,300.00	2,304.90	2,304.90	5.04	5.05	89.77	0.12	30.14	30.14	20.05	10.09	2.989		
2,400.00	2,400.00	2,404.90	2,404.90	5.26	5.27	89.77	0.12	30.14	30.14	19.61	10.53	2.861		
2,500.00	2,500.00	2,504.90	2,504.90	5.49	5.50	89.77	0.12	30.14	30.14	19.18	10.98	2.744		
2,600.00	2,600.00	2,604.90	2,604.90	5.71	5.72	89.77	0.12	30.14	30.14	18.71	11.43	2.638		
2,700.00	2,700.00	2,704.90	2,704.90	5.94	5.95	89.77	0.12	30.14	30.14	18.26	11.88	2.536		
2,800.00	2,800.00	2,804.90	2,804.90	6.16	6.17	89.77	0.12	30.14	30.14	17.81	12.33	2.444		
2,900.00	2,900.00	2,904.90	2,904.90	6.39	6.40	89.77	0.12	30.14	30.14	17.36	12.78	2.358		
3,000.00	3,000.00	3,004.90	3,004.90	6.61	6.62	89.77	0.12	30.14	30.14	16.91	13.23	2.278		
3,100.00	3,100.00	3,104.90	3,104.90	6.83	6.85	89.77	0.12	30.14	30.14	16.46	13.68	2.203		
3,200.00	3,200.00	3,204.90	3,204.90	7.06	7.07	89.77	0.12	30.14	30.14	16.01	14.13	2.133		
3,300.00	3,300.00	3,304.90	3,304.90	7.28	7.30	89.77	0.12	30.14	30.14	15.56	14.58	2.067		
3,400.00	3,400.00	3,404.90	3,404.90	7.51	7.52	89.77	0.12	30.14	30.14	15.11	15.03	2.005		
3,414.95	3,414.95	3,419.85	3,419.85	7.54	7.55	89.77	0.12	30.14	30.14	15.04	15.10	1.998 CC		
3,500.00	3,500.00	3,504.88	3,504.88	7.73	7.75	89.77	0.12	30.14	30.14	14.66	15.46	1.947 ES SF		
3,600.00	3,600.00	3,604.39	3,604.39	7.96	7.96	89.01	0.54	31.00	31.00	15.09	15.92	1.948		
3,700.00	3,700.00	3,703.65	3,703.80	8.18	8.17	87.08	1.70	33.40	33.46	17.12	16.34	2.048		
3,800.00	3,800.00	3,803.18	3,803.04	8.41	8.38	84.48	3.62	37.35	37.57	20.81	16.76	2.241		
3,900.00	3,900.00	3,902.33	3,902.00	8.63	8.59	81.65	6.29	42.84	43.40	26.22	17.18	2.526		
4,000.00	4,000.00	4,001.24	4,000.60	8.86	8.81	78.99	9.70	49.85	50.96	33.37	17.59	2.897		
4,100.00	4,100.00	4,099.84	4,098.73	9.08	9.02	76.67	13.83	58.36	60.29	42.29	18.00	3.350		
4,200.00	4,200.00	4,199.26	4,197.62	9.31	9.25	74.81	18.39	67.75	70.57	52.14	18.43	3.829		
4,300.00	4,300.00	4,298.71	4,296.51	9.53	9.47	73.43	22.96	77.14	80.92	62.05	18.87	4.299		
4,400.00	4,400.00	4,298.16	4,295.41	9.76	9.70	72.36	27.52	86.53	91.30	71.99	19.31	4.729		
4,500.00	4,500.00	4,297.60	4,294.31	9.98	9.93	71.51	32.08	95.92	101.70	81.96	19.74	5.151		
4,600.00	4,600.00	4,297.05	4,293.21	10.21	10.17	70.81	36.85	105.32	112.12	91.94	20.18	5.555		
4,700.00	4,700.00	4,296.50	4,292.10	10.43	10.40	70.24	41.21	114.71	122.56	101.93	20.62	5.942		
4,800.00	4,800.00	4,295.95	4,291.00	10.66	10.64	69.75	45.77	124.10	133.00	111.94	21.07	6.314		
4,900.00	4,900.00	4,295.39	4,289.90	10.88	10.86	69.34	50.34	133.49	143.46	121.95	21.51	6.670		
5,000.00	5,000.00	4,294.84	4,288.80	11.11	11.12	68.98	54.90	142.89	153.92	131.96	21.95	7.012		

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference:
TVD Reference: 3474' GE + 25 KB @ 3489.00usft
MD Reference: 3474' GE + 25 KB @ 3489.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design														Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 718H - OH - Plan #4														Offset Sta Error:	
Survey Program: O-LEAM MWD+HDCM														Offset Well Error:														0.00 USH	
Reference				Offset				General Major Axis				Distance				Warning													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre -N-S (usft)	-E-W (usft)	Between Centres (usft)	Between Edges (usft)	Minimum Separation (usft)	Separation Factor																	
5,100.00	5,100.00	5,094.35	5,087.76	11.33	11.36	47.89	59.47	157.28	163.80	141.40	22.39	7.314																	
5,200.00	5,199.98	5,193.86	5,186.82	11.55	11.61	48.27	64.04	161.89	172.52	149.89	22.64	7.555																	
5,300.00	5,299.88	5,293.85	5,285.85	11.78	11.85	48.98	68.61	171.11	180.11	158.83	23.28	7.737																	
5,400.00	5,399.88	5,393.37	5,385.13	12.00	12.10	50.00	73.19	180.53	188.60	162.87	23.72	7.886																	
5,500.00	5,499.41	5,493.11	5,484.32	12.22	12.35	51.29	77.77	189.95	197.37	168.21	24.16	7.981																	
5,600.00	5,599.13	5,592.85	5,583.50	12.45	12.60	52.52	82.35	199.37	198.22	173.81	24.61	8.084																	
5,700.00	5,698.88	5,692.59	5,682.89	12.67	12.85	53.69	86.92	208.78	204.15	178.09	25.06	8.147																	
5,800.00	5,798.59	5,792.33	5,781.88	12.89	13.11	54.78	91.50	218.21	210.16	184.65	25.51	8.238																	
5,900.00	5,898.31	5,892.07	5,881.07	13.12	13.36	55.82	96.08	227.63	218.24	190.28	25.96	8.328																	
6,000.00	5,998.04	5,991.82	5,980.28	13.35	13.62	56.80	100.65	237.05	222.38	195.97	26.41	8.418																	
6,100.00	6,097.77	6,091.56	6,079.45	13.57	13.87	57.73	105.23	246.47	228.60	201.73	26.87	8.508																	
6,200.00	6,197.50	6,191.30	6,178.64	13.80	14.13	58.61	109.81	255.89	234.87	207.34	27.33	8.598																	
6,300.00	6,297.22	6,291.04	6,277.83	14.03	14.38	59.44	114.39	265.31	241.19	213.40	27.78	8.689																	
6,400.00	6,396.95	6,390.78	6,377.02	14.26	14.63	60.23	118.96	274.73	247.55	219.31	28.24	8.785																	
6,500.00	6,496.68	6,490.52	6,476.21	14.49	14.91	60.80	123.54	284.15	253.97	225.28	28.71	8.847																	
6,600.00	6,596.40	6,590.26	6,575.38	14.72	15.17	61.68	128.12	293.57	260.42	231.25	29.17	8.928																	
6,700.00	6,696.13	6,690.00	6,674.58	14.96	15.43	62.37	132.70	302.99	266.91	237.28	29.63	9.007																	
6,800.00	6,795.86	6,789.74	6,773.77	15.19	15.69	63.01	137.27	312.41	273.44	243.34	30.10	9.085																	
6,900.00	6,895.58	6,889.48	6,872.98	15.42	15.95	63.63	141.85	321.83	280.00	249.43	30.57	9.161																	
7,000.00	6,995.31	6,989.22	6,972.15	15.66	16.21	64.22	146.43	331.25	286.58	255.55	31.03	9.235																	
7,100.00	7,095.04	7,088.96	7,071.34	15.89	16.47	64.78	151.00	340.67	293.21	261.70	31.50	9.307																	
7,200.00	7,194.77	7,188.70	7,170.53	16.12	16.74	65.31	155.58	350.09	299.65	267.88	31.97	9.378																	
7,300.00	7,294.49	7,288.44	7,269.72	16.36	17.00	65.83	160.16	359.51	306.52	274.08	32.44	9.448																	
7,400.00	7,394.22	7,388.18	7,368.81	16.60	17.27	66.32	164.74	368.93	313.22	280.30	32.92	9.515																	
7,500.00	7,493.95	7,487.92	7,468.10	16.83	17.53	66.78	169.31	378.35	319.93	286.54	33.39	9.582																	
7,600.00	7,593.67	7,587.66	7,567.29	17.07	17.80	67.24	173.88	387.77	326.67	292.80	33.87	9.646																	
7,700.00	7,693.40	7,687.40	7,668.47	17.31	18.08	67.67	178.47	397.18	333.43	299.08	34.34	9.708																	
7,800.00	7,793.13	7,787.14	7,765.66	17.54	18.33	68.09	183.04	406.61	340.20	305.38	34.82	9.771																	
7,900.00	7,892.86	7,886.88	7,864.65	17.78	18.60	68.48	187.62	416.03	346.99	311.70	35.29	9.831																	
8,000.00	7,992.58	7,986.62	7,964.04	18.02	18.86	68.87	192.20	425.45	353.80	318.03	35.77	9.890																	
8,100.00	8,092.31	8,086.36	8,063.23	18.26	19.13	69.24	196.78	434.87	360.62	324.37	36.25	9.948																	
8,200.00	8,192.04	8,186.11	8,162.42	18.50	19.40	69.60	201.35	444.29	367.48	330.73	36.73	10.004																	
8,300.00	8,291.78	8,285.85	8,261.61	18.73	19.67	69.94	205.93	453.71	374.31	337.10	37.21	10.059																	
8,400.00	8,391.49	8,385.56	8,360.80	18.97	19.93	70.27	210.51	463.13	381.17	343.48	37.68	10.113																	
8,500.00	8,491.22	8,485.33	8,459.99	19.21	20.20	70.58	215.09	472.55	388.05	349.88	38.17	10.165																	
8,600.00	8,590.95	8,585.07	8,559.18	19.45	20.47	70.90	219.66	481.97	394.94	356.28	38.66	10.217																	
8,700.00	8,690.67	8,684.81	8,658.38	19.69	20.74	71.19	224.24	491.39	401.84	362.70	39.14	10.267																	
8,800.00	8,790.40	8,784.55	8,757.55	19.93	21.01	71.48	228.82	500.81	408.75	369.12	39.62	10.318																	
8,900.00	8,890.13	8,884.28	8,856.74	20.16	21.28	71.76	233.39	510.23	415.66	375.56	40.11	10.364																	
9,000.00	8,989.85	8,984.03	8,955.83	20.42	21.55	72.03	237.97	519.65	422.59	382.00	40.59	10.410																	
9,100.00	9,089.58	9,083.77	9,055.12	20.66	21.82	72.29	242.55	529.08	429.53	388.45	41.08	10.456																	
9,200.00	9,189.31	9,183.51	9,154.31	20.90	22.09	72.54	247.13	538.50	436.48	394.91	41.56	10.501																	
9,300.00	9,289.03	9,283.23	9,253.50	21.14	22.36	72.78	251.70	547.92	443.43	401.38	42.05	10.545																	
9,400.00	9,388.76	9,382.99	9,352.89	21.38	22.63	73.02	256.28	557.34	450.39	407.85	42.54	10.588																	
9,500.00	9,488.49	9,482.73	9,451.88	21.62	22.90	73.25	260.86	566.78	457.36	414.34	43.02	10.630																	
9,600.00	9,588.28	9,582.46	9,551.08	21.81	23.17	73.42	265.43	576.18	464.62	421.17	43.45	10.683																	
9,700.00	9,688.18	9,682.16	9,650.20	21.99	23.44	73.49	270.01	585.59	472.38	428.51	43.87	10.767																	
9,800.00	9,788.13	9,781.78	9,748.27	22.17	23.72	73.17	274.58	595.00	480.65	436.37	44.28	10.853																	
9,900.00	9,888.12	9,881.31	9,846.25	22.34	24.00	72.77	279.15	604.40	488.44	444.76	44.68	10.953																	
10,000.00	9,988.12	9,980.78	9,947.15	22.53	24.26	72.04	283.71	613.79	496.80	453.52	45.09	11.058																	
10,100.00	10,088.12	10,080.21	10,046.05	22.75	24.53	72.48	288.28	623.19	507.83	462.30	45.53	11.154																	
10,200.00	10,188.12	10,179.85	10,144.95	22.98	24.80	71.91	292.84	632.58	517.10	471.14	45.97	11.249																	

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LEAM Drilling Services

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Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 716H - OH - Plan #4													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD-HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/S (usft)	+E/W (usft)					
10,300.00	10,288.12	10,281.29	10,248.03	23.18	25.07	91.37	297.48	642.12	528.37	479.98	48.42	11.340	
10,400.00	10,388.12	10,389.83	10,354.12	23.40	25.30	90.88	301.79	651.00	534.48	487.62	48.88	11.405	
10,500.00	10,488.12	10,498.72	10,462.72	23.82	25.52	90.51	305.22	658.05	540.92	493.63	47.30	11.437	
10,600.00	10,588.12	10,607.88	10,571.70	23.84	25.72	90.24	307.75	663.28	545.68	497.98	47.72	11.435	
10,700.00	10,688.12	10,717.18	10,680.98	24.08	25.92	90.07	309.37	668.80	548.73	500.80	48.14	11.400	
10,800.00	10,788.12	10,826.51	10,790.38	24.28	26.10	89.99	310.08	668.07	550.07	501.53	48.54	11.332	
10,900.00	10,888.12	10,929.28	10,893.02	24.49	26.29	89.99	310.12	668.14	550.14	501.19	48.95	11.238	
11,000.00	10,988.11	11,029.24	10,993.01	24.70	26.49	-89.79	310.12	668.14	550.14	500.77	49.37	11.143	
11,025.25	11,013.28	11,054.41	11,018.18	24.74	26.54	-89.99	310.12	668.14	550.13	500.88	49.45	11.125	
11,100.00	11,086.96	11,128.09	11,091.86	24.83	26.68	-91.24	310.12	668.14	550.27	500.81	49.66	11.081	
11,200.00	11,181.83	11,222.96	11,186.73	24.92	26.87	-94.15	310.12	668.14	551.84	501.99	49.86	11.069	
11,300.00	11,269.84	11,310.97	11,274.74	24.98	27.05	-97.85	310.12	668.14	557.54	507.55	49.99	11.153	
11,400.00	11,349.32	11,401.02	11,364.75	25.02	27.22	-102.08	308.45	668.15	570.52	520.41	50.11	11.384	
11,500.00	11,414.88	11,516.50	11,478.22	25.06	27.38	-107.12	288.14	668.28	589.94	539.82	50.12	11.770	
11,600.00	11,467.49	11,658.18	11,608.29	25.10	27.47	-112.42	232.91	668.57	613.28	583.54	49.74	12.329	
11,700.00	11,504.57	11,839.27	11,748.16	25.27	27.53	-117.81	119.06	669.21	636.52	587.88	48.64	13.088	
11,800.00	11,524.98	12,070.22	11,863.73	25.51	27.62	-122.08	-79.08	670.31	653.35	608.14	47.21	13.838	
11,900.00	11,529.00	12,296.40	11,894.00	25.82	27.99	-123.21	-291.96	671.50	657.50	610.29	47.21	13.828	
12,000.00	11,529.00	12,386.40	11,894.00	26.23	28.32	-123.21	-391.96	672.06	657.50	609.68	47.82	13.750	
12,100.00	11,529.00	12,486.40	11,894.00	26.72	28.75	-123.21	-491.96	672.82	657.49	608.91	48.59	13.532	
12,200.00	11,529.00	12,586.40	11,894.00	27.31	29.28	-123.21	-591.96	673.18	657.49	607.98	49.61	13.280	
12,300.00	11,529.00	12,686.40	11,894.00	27.98	29.89	-123.21	-691.95	673.74	657.49	606.91	50.58	12.999	
12,400.00	11,529.00	12,786.40	11,894.00	28.73	30.58	-123.21	-791.85	674.30	657.49	605.71	51.78	12.697	
12,500.00	11,529.00	12,886.40	11,894.00	29.55	31.34	-123.21	-891.95	674.85	657.49	604.37	53.11	12.379	
12,600.00	11,529.00	12,986.40	11,894.00	30.44	32.18	-123.21	-991.95	675.41	657.49	602.93	54.56	12.051	
12,700.00	11,529.00	13,086.40	11,894.00	31.38	33.07	-123.21	-1,091.95	675.97	657.48	601.37	56.12	11.717	
12,800.00	11,529.00	13,186.40	11,894.00	32.38	34.02	-123.21	-1,191.95	676.53	657.48	599.71	57.77	11.381	
12,900.00	11,529.00	13,286.40	11,894.00	33.44	35.02	-123.21	-1,291.94	677.09	657.48	597.98	59.52	11.047	
13,000.00	11,529.00	13,386.40	11,894.00	34.54	36.06	-123.21	-1,391.94	677.65	657.48	596.13	61.35	10.717	
13,100.00	11,529.00	13,486.40	11,894.00	35.68	37.15	-123.21	-1,491.94	678.20	657.48	594.22	63.25	10.394	
13,200.00	11,529.00	13,586.40	11,894.00	36.85	38.28	-123.21	-1,591.94	678.76	657.47	592.24	65.23	10.079	
13,300.00	11,529.00	13,686.40	11,894.00	38.07	39.45	-123.21	-1,691.94	679.32	657.47	590.20	67.27	9.774	
13,400.00	11,529.00	13,786.40	11,894.00	39.31	40.84	-123.21	-1,791.94	679.88	657.47	588.10	69.37	9.478	
13,500.00	11,529.00	13,886.40	11,894.00	40.58	41.87	-123.21	-1,891.93	680.44	657.47	585.95	71.52	9.193	
13,600.00	11,529.00	13,986.40	11,894.00	41.88	43.12	-123.21	-1,991.93	681.00	657.47	583.75	73.71	8.919	
13,700.00	11,529.00	14,086.40	11,894.00	43.20	44.40	-123.21	-2,091.93	681.56	657.47	581.51	75.96	8.658	
13,800.00	11,529.00	14,186.40	11,894.00	44.54	45.71	-123.21	-2,191.93	682.11	657.46	579.22	78.24	8.433	
13,900.00	11,529.00	14,286.40	11,894.00	45.90	47.03	-123.21	-2,291.93	682.67	657.48	576.90	80.58	8.181	
14,000.00	11,529.00	14,386.40	11,894.00	47.28	48.37	-123.21	-2,391.93	683.23	657.46	574.55	82.91	7.930	
14,100.00	11,529.00	14,486.40	11,894.00	48.67	49.73	-123.21	-2,491.93	683.79	657.46	572.16	85.30	7.708	
14,200.00	11,529.00	14,586.40	11,894.00	50.08	51.11	-123.21	-2,591.92	684.35	657.46	569.75	87.71	7.498	
14,300.00	11,529.00	14,686.40	11,894.00	51.51	52.50	-123.21	-2,691.92	684.91	657.45	567.31	90.15	7.293	
14,400.00	11,529.00	14,786.40	11,894.00	52.94	53.91	-123.21	-2,791.92	685.47	657.45	564.85	92.61	7.099	
14,500.00	11,529.00	14,886.40	11,894.00	54.39	55.33	-123.21	-2,891.92	686.02	657.45	562.36	95.09	6.914	
14,600.00	11,529.00	14,986.40	11,894.00	55.85	56.76	-123.21	-2,991.92	686.58	657.45	559.85	97.60	6.736	
14,700.00	11,529.00	15,086.40	11,894.00	57.31	58.20	-123.21	-3,091.92	687.14	657.45	557.33	100.12	6.567	
14,800.00	11,529.00	15,186.40	11,894.00	58.79	59.65	-123.21	-3,191.91	687.70	657.45	554.78	102.66	6.404	
14,900.00	11,529.00	15,286.40	11,894.00	60.28	61.11	-123.21	-3,291.91	688.26	657.44	552.22	105.22	6.248	
15,000.00	11,529.00	15,386.40	11,894.00	61.77	62.58	-123.21	-3,391.91	688.82	657.44	549.65	107.79	6.099	
15,100.00	11,529.00	15,486.40	11,894.00	63.27	64.06	-123.21	-3,491.91	689.37	657.44	547.08	110.38	5.958	
15,200.00	11,529.00	15,586.40	11,894.00	64.78	65.55	-123.21	-3,591.91	689.93	657.44	544.46	112.98	5.819	
15,300.00	11,529.00	15,686.40	11,894.00	66.29	67.04	-123.21	-3,691.91	690.49	657.44	541.85	115.59	5.688	

CC - M n centre to center distance or convergent point. SF - min separation factor ES - min ellipse separation

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Tomb Raider 1-12 Fed Com
Site Error: 0.00 usft
Reference Well: Tomb Raider 1-12 Fed Com 334H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3474' GE + 25' KB @ 3498.00usft
MD Reference: 3474' GE + 25' KB @ 3498.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 718H - OH - Plan #4													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD-HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface [°]	Distance		Between Centres [usft]	Between Ellipses [usft]	Minimum Separation [usft]	Separation Factor	Warning
Measured Depth [usft]	Vertical Depth [usft]	Measured Depth [usft]	Vertical Depth [usft]	Reference [usft]	Offset [usft]		Offset Wellbore Centre +N-S [usft]	+E-W [usft]					
15,400.00	11,529.00	15,786.40	11,894.00	67.81	68.54	-123.21	-3,791.91	691.05	657.44	539.22	118.22	5.561	
15,500.00	11,529.00	15,886.40	11,894.00	69.34	70.05	-123.21	-3,891.90	691.81	657.43	536.58	120.85	5.440	
15,600.00	11,529.00	15,986.40	11,894.00	70.87	71.56	-123.21	-3,991.90	692.17	657.43	533.94	123.49	5.324	
15,700.00	11,529.00	16,086.40	11,894.00	72.40	73.08	-123.21	-4,091.90	692.73	657.43	531.28	126.15	5.212	
15,800.00	11,529.00	16,186.40	11,894.00	73.94	74.60	-123.21	-4,191.90	693.28	657.43	528.62	128.81	5.104	
15,900.00	11,529.00	16,286.40	11,894.00	75.48	76.13	-123.21	-4,291.90	693.84	657.43	525.95	131.48	5.000	
16,000.00	11,529.00	16,386.40	11,894.00	77.03	77.66	-123.21	-4,391.90	694.40	657.42	523.27	134.16	4.900	
16,100.00	11,529.00	16,486.40	11,894.00	78.58	79.20	-123.21	-4,491.89	694.96	657.42	520.58	136.84	4.804	
16,200.00	11,529.00	16,586.40	11,894.00	80.14	80.74	-123.21	-4,591.89	695.52	657.42	517.88	139.54	4.711	
16,300.00	11,529.00	16,686.40	11,894.00	81.70	82.28	-123.21	-4,691.89	696.08	657.42	515.18	142.24	4.622	
16,400.00	11,529.00	16,786.40	11,894.00	83.26	83.83	-123.21	-4,791.89	696.64	657.42	512.48	144.94	4.536	
16,500.00	11,529.00	16,886.40	11,894.00	84.82	85.38	-123.21	-4,891.89	697.19	657.42	509.76	147.65	4.453	
16,600.00	11,529.00	16,986.40	11,894.00	86.39	86.94	-123.21	-4,991.89	697.75	657.41	507.05	150.37	4.372	
16,604.17	11,529.00	16,990.58	11,894.00	86.48	87.00	-123.21	-4,996.06	697.78	657.41	506.93	150.48	4.369	
16,700.00	11,529.00	17,082.63	11,894.76	87.96	88.20	-123.27	-5,088.11	698.29	657.84	505.04	152.61	4.305	
16,800.00	11,529.00	17,182.62	11,895.80	89.53	89.72	-123.34	-5,188.09	698.85	658.42	503.01	155.40	4.237	
16,900.00	11,529.00	17,282.62	11,896.85	91.11	91.29	-123.42	-5,288.08	699.41	658.99	500.98	158.03	4.170	
17,000.00	11,529.00	17,382.61	11,897.89	92.68	92.85	-123.50	-5,388.07	699.97	659.57	498.90	160.66	4.105	
17,100.00	11,529.00	17,482.61	11,898.93	94.26	94.42	-123.57	-5,488.06	700.54	660.14	496.85	163.29	4.043	
17,200.00	11,529.00	17,582.60	11,899.98	95.84	95.99	-123.65	-5,588.04	701.10	660.72	494.80	165.92	3.982	
17,300.00	11,529.00	17,682.60	11,901.02	97.43	97.56	-123.72	-5,688.03	701.66	661.30	492.74	168.56	3.923	
17,400.00	11,529.00	17,782.59	11,902.06	99.01	99.14	-123.80	-5,788.02	702.22	661.88	490.69	171.19	3.866	
17,500.00	11,529.00	17,882.58	11,903.11	100.60	100.72	-123.87	-5,888.01	702.78	662.46	488.64	173.82	3.811	
17,600.00	11,529.00	17,982.58	11,904.15	102.19	102.30	-123.95	-5,987.99	703.34	663.04	486.59	176.45	3.758	
17,700.00	11,529.00	18,082.57	11,905.19	103.78	103.88	-124.02	-6,087.98	703.90	663.63	484.55	179.08	3.706	
17,800.00	11,529.00	18,182.57	11,906.24	105.37	105.46	-124.10	-6,187.97	704.46	664.21	482.50	181.71	3.655	
17,900.00	11,529.00	18,282.56	11,907.28	106.96	107.04	-124.17	-6,287.96	705.02	664.80	480.46	184.34	3.606	
18,000.00	11,529.00	18,382.56	11,908.32	108.56	108.63	-124.24	-6,387.94	705.58	665.38	478.42	186.96	3.559	
18,100.00	11,529.00	18,482.55	11,909.36	110.15	110.22	-124.32	-6,487.93	706.15	665.97	476.38	189.59	3.513	
18,200.00	11,529.00	18,582.55	11,910.41	111.75	111.81	-124.39	-6,587.92	706.71	666.56	474.34	192.22	3.468	
18,300.00	11,529.00	18,682.54	11,911.45	113.35	113.40	-124.47	-6,687.91	707.27	667.15	472.31	194.84	3.424	
18,400.00	11,529.00	18,782.54	11,912.49	114.95	114.99	-124.54	-6,787.89	707.83	667.74	470.28	197.46	3.382	
18,500.00	11,529.00	18,882.53	11,913.54	116.55	116.58	-124.61	-6,887.88	708.39	668.33	468.25	200.09	3.340	
18,600.00	11,529.00	18,982.52	11,914.58	118.15	118.18	-124.69	-6,987.87	708.95	668.93	466.22	202.71	3.300	
18,700.00	11,529.00	19,082.52	11,915.62	119.75	119.78	-124.76	-7,087.86	709.51	669.52	464.20	205.32	3.261	
18,800.00	11,529.00	19,182.51	11,916.67	121.36	121.37	-124.83	-7,187.84	710.07	670.12	462.18	207.94	3.223	
18,900.00	11,529.00	19,282.51	11,917.71	122.96	122.97	-124.91	-7,287.83	710.63	670.72	460.16	210.56	3.185	
19,000.00	11,529.00	19,382.50	11,918.75	124.57	124.57	-124.98	-7,387.82	711.19	671.31	458.14	213.17	3.149	
19,100.00	11,529.00	19,482.50	11,919.80	126.17	126.17	-125.05	-7,487.81	711.76	671.91	456.13	215.78	3.114	
19,200.00	11,529.00	19,582.49	11,920.84	127.78	127.77	-125.13	-7,587.79	712.32	672.51	454.12	218.39	3.079	
19,300.00	11,529.00	19,682.49	11,921.88	129.39	129.37	-125.20	-7,687.78	712.88	673.11	452.12	221.00	3.046	
19,400.00	11,529.00	19,782.48	11,922.93	131.00	130.98	-125.27	-7,787.77	713.44	673.72	450.11	223.60	3.013	
19,500.00	11,529.00	19,882.48	11,923.97	132.61	132.58	-125.34	-7,887.76	714.00	674.32	448.11	226.21	2.981	
19,600.00	11,529.00	19,982.47	11,925.01	134.22	134.19	-125.42	-7,987.74	714.56	674.92	446.12	228.81	2.950	
19,700.00	11,529.00	20,082.46	11,926.06	135.83	135.79	-125.49	-8,087.73	715.12	675.53	444.12	231.41	2.919	
19,800.00	11,529.00	20,182.46	11,927.10	137.44	137.40	-125.56	-8,187.72	715.68	676.14	442.13	234.00	2.889	
19,900.00	11,529.00	20,282.45	11,928.14	139.05	139.01	-125.63	-8,287.71	716.24	676.74	440.14	236.60	2.860	
20,000.00	11,529.00	20,382.45	11,929.19	140.67	140.61	-125.70	-8,387.70	716.80	677.35	438.16	239.19	2.832	
20,100.00	11,529.00	20,482.44	11,930.23	142.28	142.22	-125.77	-8,487.68	717.37	677.96	436.18	241.78	2.804	
20,200.00	11,529.00	20,582.44	11,931.27	143.90	143.83	-125.85	-8,587.67	717.93	678.57	434.20	244.37	2.777	
20,300.00	11,529.00	20,682.43	11,932.31	145.51	145.44	-125.92	-8,687.66	718.49	679.18	432.23	246.95	2.750	
20,400.00	11,529.00	20,782.43	11,933.36	147.13	147.05	-125.99	-8,787.65	719.05	679.80	430.26	249.54	2.724	

CC - M:n centre to center distance or convergent point SF - min separation factor. ES - min ellipse separation

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Tomb Raider 1-12 Fed Com - Tomb Raider 1-12 Fed Com 718H - OH - Plan #4													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,500.00	11,529.00	20,882.42	11,934.40	148.74	148.67	-128.08	-8,887.63	719.61	680.41	426.30	252.11	2.699	
20,600.00	11,529.00	20,982.42	11,935.44	150.36	150.28	-128.13	-8,987.62	720.17	681.03	426.33	254.69	2.674	
20,700.00	11,529.00	21,082.41	11,936.49	151.98	151.89	-128.20	-9,087.61	720.73	681.64	424.38	257.27	2.650	
20,800.00	11,529.00	21,182.40	11,937.53	153.59	153.50	-128.27	-9,187.60	721.29	682.26	422.42	259.84	2.626	
20,900.00	11,529.00	21,282.40	11,938.57	155.21	155.12	-128.34	-9,287.58	721.85	682.88	420.47	262.41	2.602	
21,000.00	11,529.00	21,382.39	11,939.62	156.83	156.73	-128.41	-9,387.57	722.42	683.50	418.52	264.98	2.579	
21,100.00	11,529.00	21,482.39	11,940.66	158.45	158.35	-128.48	-9,487.56	722.98	684.12	416.58	267.54	2.557	
21,200.00	11,529.00	21,582.38	11,941.70	160.07	159.96	-128.55	-9,587.55	723.54	684.74	414.64	270.10	2.535	
21,300.00	11,529.00	21,682.38	11,942.75	161.69	161.58	-128.62	-9,687.53	724.10	685.36	412.70	272.66	2.514	
21,400.00	11,529.00	21,782.37	11,943.79	163.31	163.19	-128.69	-9,787.52	724.66	685.98	410.77	275.22	2.493	
21,472.24	11,529.00	21,854.60	11,944.54	164.48	164.36	-128.74	-9,859.75	725.06	686.43	409.37	277.06	2.478	

LEAM Drilling Services

Anticollision Report

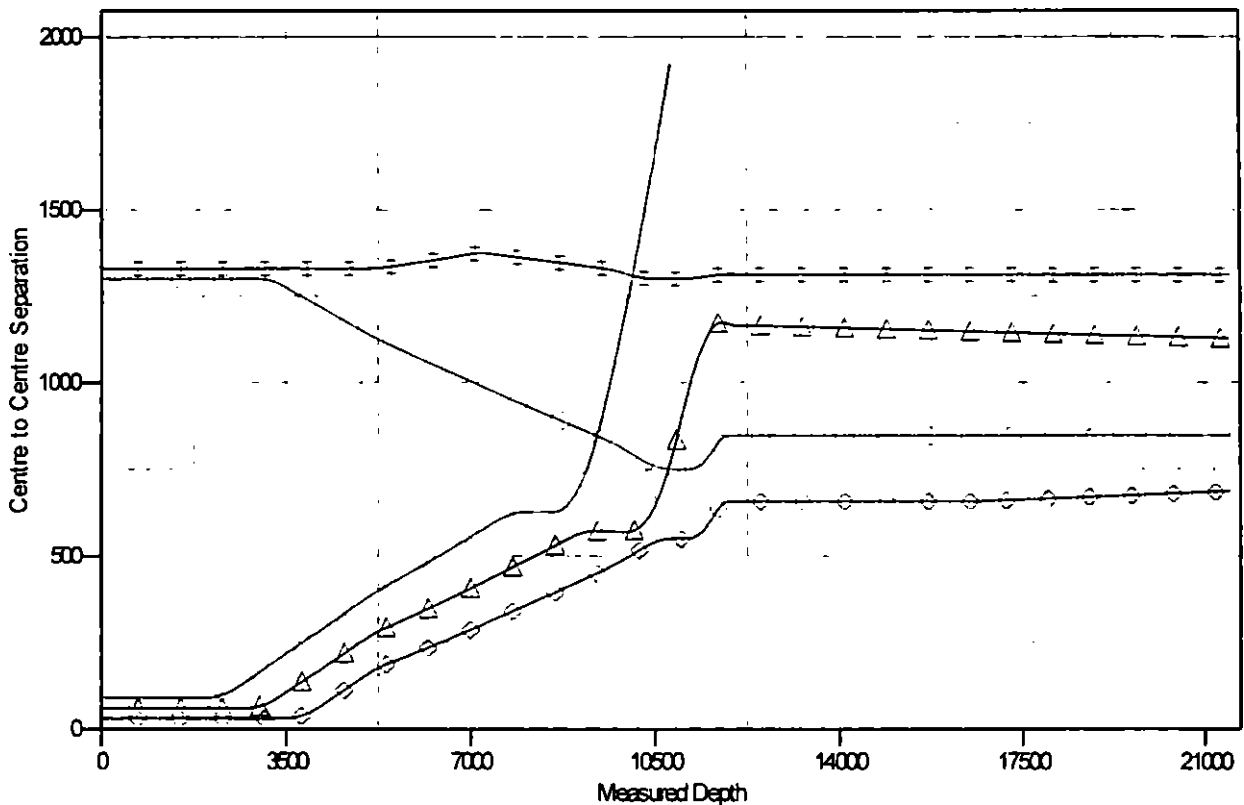
Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Tomb Raider 1-12 Fed Com
 Site Error: 0.00 usft
 Reference Well: Tomb Raider 1-12 Fed Com 334H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
 TVD Reference: 3474' GE + 25' KB @ 3499.00usft
 MD Reference: 3474' GE + 25' KB @ 3499.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Reference Depths are relative to 3474' GE + 25' KB @ 3499.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: Tomb Raider 1-12 Fed Com 334H
 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 Com 714H, OH, Plan#3 V0
- Tomb Raider 1-12 Fed Com 234H, OH, Plan#3 V0
- Tomb Raider 1-12 Fed Com 718H, OH, Plan#4
- Tomb Raider 1-12 Fed Com 528H, OH, Plan#3 V0
- Tomb Raider 1-12 Fed Com 614H, OH, Plan#2 V0

LEAM Drilling Services

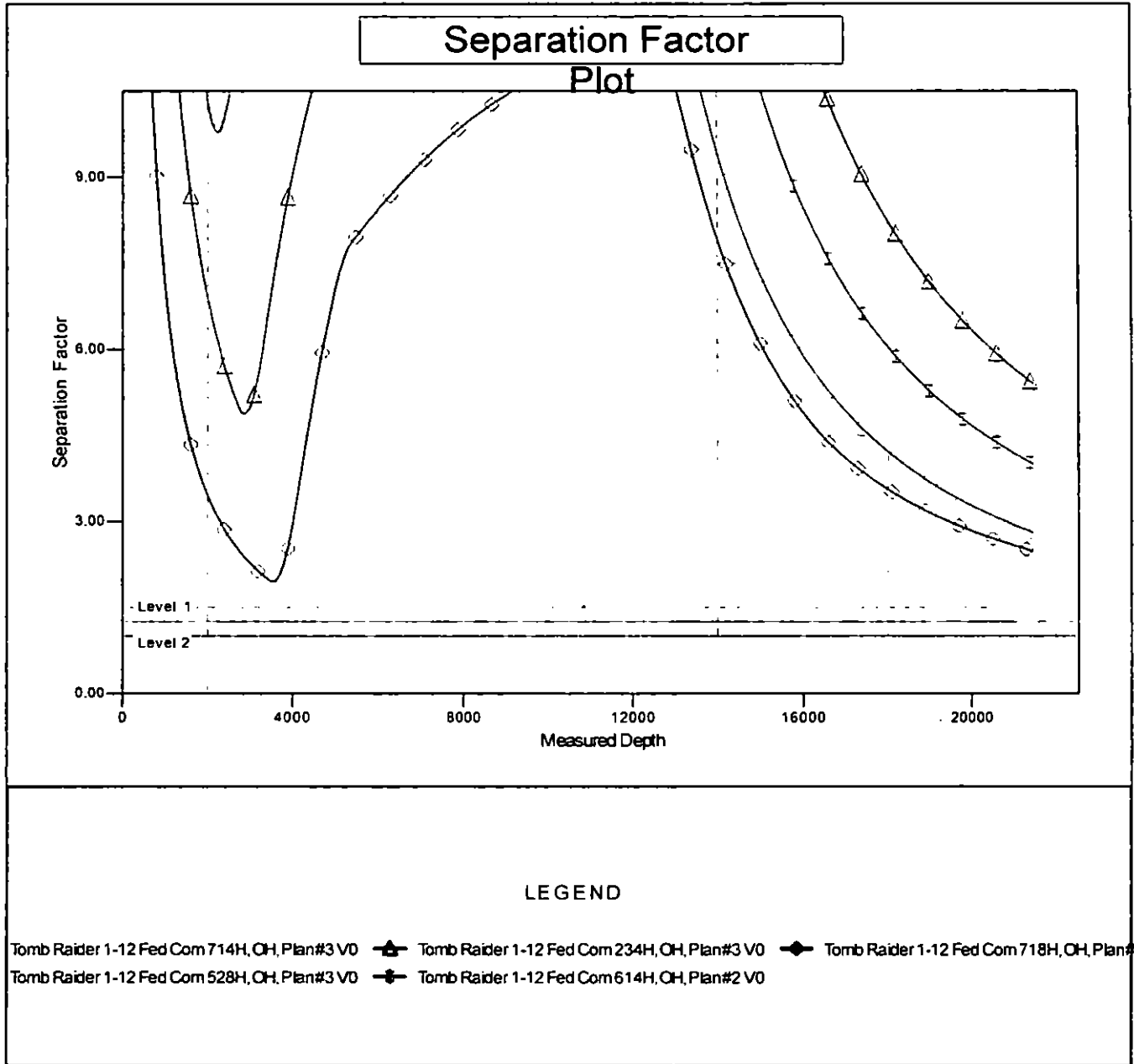
Anticollision Report

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 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.32°



COMPANY Devon Energy
FIELD Elder County, NM (NAD-83)
SITE Tomb Rider 1-12 Fed Com
WELL Wellb Path
DESIGN Plan 84
DEPTH Unit (feet)

WELL ID# O
MAP DATUM North American Datum 1983
MAP SYSTEM US State Plane 1983
MAP ZONE New Mexico Eastern Zone
WELL LAT 32.319724
WELL LONG -103.71642
WELL ELEV MAU 728777.94
WELL NS MAP 487854.7
CONVERGENCE 0.32
MAGMODEL HOGM
DECLINATION 6.95
NORTH REF Grid
GROUND ELE 3420.6
FB ELEV 3499
VS AZ 179.64

SURVEY PROGRAM

1. 0.00 - 2.147174 PLAN 84.1 (EAM MAPD-HOGM)

SURVEY LOG

Measured Depth MD	Interval INC	Altitude AZ	Course Length CL	True Vertical TVD	Local WGS WGS	Local UTM UTM	Easting E	Northing N	Latitude LAT	Longitude LON	Dropped Invert Based Rate DIB	Turn Rate TRN	Vertical Section VS
0.00	0.00	0.00	0.00	0.00	3499.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
100.00	0.00	0.00	0.00	100.00	3399.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
200.00	0.00	0.00	0.00	200.00	3299.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
300.00	0.00	0.00	0.00	300.00	3199.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
400.00	0.00	0.00	0.00	400.00	3099.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
500.00	0.00	0.00	0.00	500.00	2999.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
600.00	0.00	0.00	0.00	600.00	2899.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
700.00	0.00	0.00	0.00	700.00	2799.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
800.00	0.00	0.00	0.00	800.00	2699.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
900.00	0.00	0.00	0.00	900.00	2599.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1000.00	0.00	0.00	0.00	1000.00	2499.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1100.00	0.00	0.00	0.00	1100.00	2399.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1200.00	0.00	0.00	0.00	1200.00	2299.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1300.00	0.00	0.00	0.00	1300.00	2199.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1400.00	0.00	0.00	0.00	1400.00	2099.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1500.00	0.00	0.00	0.00	1500.00	1999.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1600.00	0.00	0.00	0.00	1600.00	1899.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1700.00	0.00	0.00	0.00	1700.00	1799.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1800.00	0.00	0.00	0.00	1800.00	1699.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
1900.00	0.00	0.00	0.00	1900.00	1599.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2000.00	0.00	0.00	0.00	2000.00	1499.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2100.00	0.00	0.00	0.00	2100.00	1399.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2200.00	0.00	0.00	0.00	2200.00	1299.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2300.00	0.00	0.00	0.00	2300.00	1199.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2400.00	0.00	0.00	0.00	2400.00	1099.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2500.00	0.00	0.00	0.00	2500.00	999.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2600.00	0.00	0.00	0.00	2600.00	899.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2700.00	0.00	0.00	0.00	2700.00	799.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2800.00	0.00	0.00	0.00	2800.00	699.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
2900.00	0.00	0.00	0.00	2900.00	599.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3000.00	0.00	0.00	0.00	3000.00	499.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3100.00	0.00	0.00	0.00	3100.00	399.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3200.00	0.00	0.00	0.00	3200.00	299.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3300.00	0.00	0.00	0.00	3300.00	199.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3400.00	0.00	0.00	0.00	3400.00	99.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3500.00	0.00	0.00	0.00	3500.00	-1.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3600.00	0.00	0.00	0.00	3600.00	-101.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3700.00	0.00	0.00	0.00	3700.00	-201.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3800.00	0.00	0.00	0.00	3800.00	-301.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
3900.00	0.00	0.00	0.00	3900.00	-401.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4000.00	0.00	0.00	0.00	4000.00	-501.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4100.00	0.00	0.00	0.00	4100.00	-601.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4200.00	0.00	0.00	0.00	4200.00	-701.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4300.00	0.00	0.00	0.00	4300.00	-801.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4400.00	0.00	0.00	0.00	4400.00	-901.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4500.00	0.00	0.00	0.00	4500.00	-1001.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4600.00	0.00	0.00	0.00	4600.00	-1101.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4700.00	0.00	0.00	0.00	4700.00	-1201.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4800.00	0.00	0.00	0.00	4800.00	-1301.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
4900.00	0.00	0.00	0.00	4900.00	-1401.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
5000.00	0.00	0.00	0.00	5000.00	-1501.00	0.00	0.00	728777.94	487854.70	32.319724	-103.716420	0.00	0.00
5100.00	0.00	20.84	0.00	5100.00	-1601.00	0.87	0.31	728778.25	487855.52	32.319726	-103.726419	1.00	0.00
5200.00	2.00	20.84	0.00	5200.00	-1700.95	3.26	1.24	728779.18	487857.96	32.319733	-103.726416	1.00	0.00
5300.00	1.00	20.84	0.00	5300.00	-1800.86	7.84	2.79	728780.93	487862.04	32.319744	-103.726404	1.00	0.00
5400.00	4.00	20.84	0.00	5400.00	-1900.68	13.04	4.91	728782.93	487867.74	32.319760	-103.726400	1.00	0.00
5423.41	4.23	20.84	0.00	5423.41	-1924.02	14.61	5.36	728783.50	487869.31	32.319760	-103.726402	1.00	0.00
5500.00	4.23	20.84	0.00	5500.00	-2000.41	19.90	7.34	728785.52	487874.60	32.319778	-103.726395	0.00	0.00
5600.00	4.23	20.84	0.00	5600.00	-2100.13	24.80	10.20	728788.14	487881.50	32.319794	-103.726386	0.00	0.00
5700.00	4.23	20.84	0.00	5700.00	-2199.66	31.70	17.81	728790.77	487888.40	32.319817	-103.726378	0.00	0.00
5800.00	4.23	20.84	0.00	5800.00	-2299.59	40.60	15.45	728793.19	487895.30	32.319835	-103.726369	0.00	0.00
5900.00	4.23	20.84	0.00	5900.00	-2399.11	47.50	18.08	728796.01	487902.20	32.319854	-103.726360	0.00	0.00
6000.00	4.23	20.84	0.00	6000.00	-2499.04	54.40	20.71	728798.45	487909.10	32.319872	-103.726352	0.00	0.00
6100.00	4.23	20.84	0.00	6100.00	-2598.77	61.30	22.31	728801.27	487916.00	32.319892	-103.726343	0.00	0.00
6200.00	4.23	20.84	0.00	6200.00	-2698.50	64.70	25.96	728803.90	487922.90	32.319910	-103.726335	0.00	0.00
6300.00	4.23	20.84	0.00	6300.00	-2798.22	73.10	28.59	728806.53	487929.80	32.319930	-103.726326	0.00	0.00
6400.00	4.23	20.84	0.00	6400.00	-2897.95	87.00	31.21	728809.15	487936.70	32.319949	-103.726317	0.00	0.00
6500.00	4.23	20.84	0.00	6500.00	-2997.68	94.90	33.84	728811.78	487943.60	32.319968	-103.726309	0.00	0.00
6600.00	4.23	20.84	0.00	6600.00	-3097.40	91.40	36.47	728814.41	487950.50	32.319987	-103.726300	0.00	0.00
6700.00	4.23	20.84	0.00	6700.00	-3197.13	102.70	39.09	728817.01	487957.40	32.319996	-103.726291	0.00	0.00

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION
LEASE NO.:	NMNM22080
WELL NAME & NO.:	334H –TOMB RAIDER 1-12 FED
SURFACE HOLE FOOTAGE:	360'/N & 1070'/E
BOTTOM HOLE FOOTAGE	330'/S & 950'/E
LOCATION:	Section 1.,T23S., R.31E., NMP
COUNTY:	EDDY County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☐ None	☒ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 750 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 8 5/8 inch intermediate casing is:

Operator shall filled casing with fluid while running intermediate casing to maintain collapse safety factor. Operator shall contact BLM before proceeding with Option 2.

OPTION 1.

Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

OPTION 2.

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

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

In case of lost circulation, operator proposed to pump cement down the 8 5/8" x 13 3/8 " annulus. Operator shall call BLM before proceeding a must run a CBL from TD of the 8 5/8" casing to surface and submit results to BLM.

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

- Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additonal cement maybe requierd. Excess calculates to -318%.**

CONTINGENCY PLAN

CASING

1. The 13-3/8 inch surface casing shall be set at approximately **750** 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: **Operator shall filled casing with fluid while running intermediate casing to maintain collapse safety factor. Operator shall contact BLM before proceeding with Option 2.**

OPTION 1.

Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

OPTION 2.

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

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

In case of lost circulation, operator proposed to pump cement down the 8 5/8" x 13 3/8 " annulus. Operator shall call BLM before proceeding a must run a CBL from TD of the 8 5/8" casing to surface and submit results to BLM.

- The minimum required fill of cement behind the 5-1/2 inch production casing is: Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additonal cement maybe requiried. Excess calculates to -307%.**

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

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 (one log per well pad is acceptable) 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
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: The flex line must meet the requirements of API 16C. 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. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

- 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. 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.
- f. 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. This test shall be performed prior to the test at full stack pressure.
- g. 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.

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.

ZS 053018

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION
LEASE NO.:	NMNM22080
WELL NAME & NO.:	334H –TOMB RAIDER 1-12 FED
SURFACE HOLE FOOTAGE:	360'/N & 1070'/E
BOTTOM HOLE FOOTAGE:	330'/S & 950'/E
LOCATION:	Section 1.,T23S., R.31E., NMP
COUNTY:	EDDY County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☐ None	☒ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

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

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 750 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 8 5/8 inch intermediate casing is:

Operator shall filled casing with fluid while running intermediate casing to maintain collapse safety factor. Operator shall contact BLM before proceeding with Option 2.

OPTION 1.

Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

OPTION 2.

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

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

In case of lost circulation, operator proposed to pump cement down the 8 5/8" x 13 3/8 " annulus. Operator shall call BLM before proceeding a must run a CBL from TD of the 8 5/8" casing to surface and submit results to BLM.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additonal cement maybe required. Excess calculates to -318%.**

CONTINGENCY PLAN

CASING

1. The 13-3/8 inch surface casing shall be set at approximately 750 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: **Operator shall filled casing with fluid while running intermediate casing to maintain collapse safety factor. Operator shall contact BLM before proceeding with Option 2.**

OPTION 1.

Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

OPTION 2.

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

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

In case of lost circulation, operator proposed to pump cement down the 8 5/8" x 13 3/8 " annulus. Operator shall call BLM before proceeding a must run a CBL from TD of the 8 5/8" casing to surface and submit results to BLM.

- The minimum required fill of cement behind the 5-1/2 inch production casing is: Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additional cement maybe requiried. Excess calculates to -307%.**

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

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)

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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 (one log per well pad is acceptable) 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
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: The flex line must meet the requirements of API 16C. 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. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

- 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. 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.
- f. 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. This test shall be performed prior to the test at full stack pressure.
- g. 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.

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.

ZS 053018

Sec P KFC

13 3/8 Segment	surface csg in a #/ft	Grade	17 1/2 inch hole. Coupling	Body	Design Factors		SURFACE		
"A"	54.50	J 55	BUTT	20.87	Collapse	Burst	Length	Weight	
"B"									
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500				Tail Cmt	does	circ to sfc.	Totals:	750	40,875
<u>Comparison of Proposed to Minimum Required Cement Volumes</u>									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
17 1/2	0.6946	615	818	575	42	8.60	2628	3M	1.56

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

8 5/8 Segment	casing inside the #/ft	Grade	13 3/8 Coupling	Joint	Design Factors		INTERMEDIATE		
"A"	32.00	HCL 80	BUTT	2.29	Collapse	Burst	Length	Weight	
"B"									
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	10,000	320,000
The cement volume(s) are intended to achieve a top of				0	ft from surface or a			750	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
10 5/8	0.2100	1067	3274	2304	42	9.30	3453	5M	1.00
D V Tool(s):				6000			sum of sx	Σ CuFt	Σ % excess
t by stage % :				65	40		1196	3444	49

Class 'H' tail cmt yld > 1.20

Burst Frac Gradient(s) for Segment(s) A, B, C, D = 0.57, b, c, d
<0.70 a Problem!!

Alt Collapse = 0.79*1.5 = 1.19 > 1.125 = OK

5 1/2 Segment	casing inside the #/ft	Grade	8 5/8 Coupling	Body	Design Factors		PRODUCTION		
"A"	17.00	P 110	BUTT	2.79	Collapse	Burst	Length	Weight	
"B"	17.00	P 110	BUTT	7.98					
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,413							Totals:	21,471	365,007
B would be:				57.24	1.25	if it were a vertical wellbore.			
No Pilot Hole Planned				MTD	Max VTD	Csg VD	Curve KOP	Dogleg ¹	Seventy ²
				21471	11529	11529	10968	90	10
The cement volume(s) are intended to achieve a top of				9500	ft from surface or a			500	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
7 7/8	0.1733	1807	2891		-318	10.00			0.91

Class 'H' tail cmt yld > 1.20

Sec P KFC

13 3/8	surface csg in a	17 1/2	inch hole.	Design Factors			SURFACE		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	54.50	J 55	BUTT	20.87	3.37	0.57	750	40,875	
"B"							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500			Tail Cmt	does	circ to sfc.	Totals:	750	40,875	
<u>Comparison of Proposed to Minimum Required Cement Volumes</u>									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
17 1/2	0.6946	615	818	575	42	8.60	2628	3M	1.56

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

9 5/8	casing inside the	13 3/8	Design Factors				INTERMEDIATE		
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	40.00	J 55	BUTT	1.83	1.76	0.95	4,500	180,000	
"B"	40.00	P 110	BUTT	5.75	0.88	1.5	5,500	220,000	
w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals:	10,000	400,000	
The cement volume(s) are intended to achieve a top of				0	ft from surface or a		750	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
12 1/4	0.3132	1511	4631	3188	45	9.30	3453	5M	1.31
D V Tool(s):			6000				sum of sx	Σ CuFt	Σ % excess
by stage % :		64	56				1757	5075	59

Class 'H' tail cmt yld > 1.20

Burst Frac Gradient(s) for Segment(s) A, B, C, D = 1.27, b, c, d

All > 0.70, OK.

Alt Collapse = $0.88 \times 1.5 = 1.32 > 1.125 = \text{OK}$

Tail cmt									
5 1/2	casing inside the	9 5/8				<u>Design Factors</u>		<u>PRODUCTION</u>	
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight	
"A"	17.00	P 110	BUTT	2.79	1.31	1.78	10,968	186,456	
"B"	17.00	P 110	BUTT	7.98	1.16	1.78	10,503	178,551	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,413							Totals:	21,471	365,007
B	would be:			57.24	1.25	if it were a vertical wellbore.			
No Pilot Hole Planned		MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC	
		21471	11529	11529	10968	90	10	11868	
The cement volume(s) are intended to achieve a top of				9500	ft from surface or a		500	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
8 3/4	0.2526	2522	4035		-307	10.00			1.35

Class 'H' tail cmt yld > 1.20