

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill on the site of an abandoned well. Use form 3160-3 (APD) for such proposals.

Carlsbad Field Office
OCD ArtesiaLease Serial No.
NMNM22080

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
TOMB RAIDER 1-12 FED 61H9. API Well No.
30-015-43592-00-X110. Field and Pool, or Exploratory
LIVINGSTON RIDGE11. County or Parish, and State
EDDY COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: CHANCE BLAND

E-Mail: chance.bland@devn.com

3a. Address

6488 SEVEN RIVERS HIGHWAY
ARTESIA, NM 88211

3b. Phone No. (include area code)

Ph: 405-228-8593

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

Sec 1 T23S R31E Lot 4 200FNL 1310FWL

12. CHECK 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	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall 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 Prod Co LP respectfully requests to change the well name from the Tomb Raider 1 Fed 3H to the Tomb Raider 1-12 Fed 61H and change the bottom hole location from 330 FSL 330 FWL, SEC 1-TSP 23S RGE 31E to 330 FSL 660 FWL SEC 12 TSP 23S RGE 31E. Please see attached Plat, Directional Plan and Drilling Plan.

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 11 2016

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

RECEIVED

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

Electronic Submission #351538 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY LP, sent to the Carlsbad
Committed to AFMSS for processing by DEBORAH MCKINNEY on 09/19/2016 (16DLM0936SE)

Name (Printed/Typed) CHANCE BLAND

Title REG PROF

Signature (Electronic Submission)

Date 09/16/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By MUSTAFA HAQUE

Title PETROLEUM ENGINEER

Date 10/03/2016

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.

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

OCT 11 2016

PECOS DISTRICT
CONDITIONS OF APPROVAL

RECEIVED

OPERATOR'S NAME:	Devon Energy Production Company, L.P.
LEASE NO.:	NMNM-22080
WELL NAME & NO.:	Tomb Raider 1-12 Fed 61H
SURFACE HOLE FOOTAGE:	0200' FNL & 1310' FWL
BOTTOM HOLE FOOTAGE:	0330' FSL & 0660' FWL
LOCATION:	Section 01, T. 23 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

A. CASING

All previous COAs still apply except the following:

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.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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.

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

Secretary's Potash

Possible water flows in the Salado and Castile.

Possible lost circulation in the Red Beds, Rustler, and Delaware.

1. The 13-3/8 inch surface casing shall be set at approximately 790 feet (in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet 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 is to include the lead cement slurry.**
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing, which shall be set at approximately 4400 feet (**basal anhydrite of the Castile formation**), is:

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

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

Option #1 (Single Stage):

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 11% - Additional cement may be required.**

Option #2:

Operator has proposed DV tool at depth of 5000', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

- a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage. **Excess calculates to negative 4% - Additional cement may be required.**

b. Second stage above DV tool:

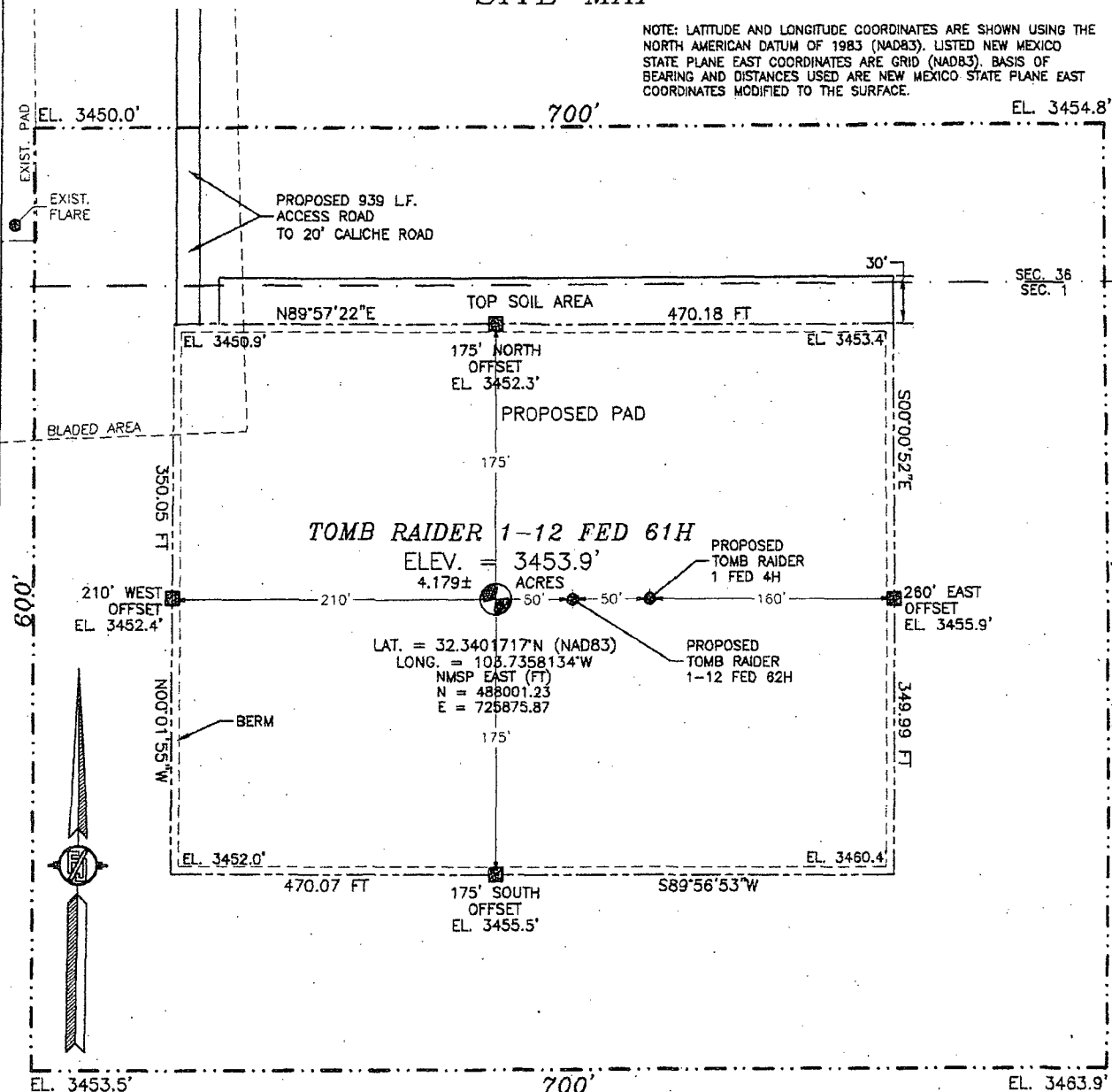
☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 1% - Additional cement may be required.**

4. 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.

MHH 10032016

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

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



010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. #798 (RED ROAD) GO NORTH ON CR. 798 6.2 MILES TURN RIGHT ON CALICHE ROAD AND GO EAST 876' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS EAST 442' THEN SOUTH 497' TO THE PROPOSED NORTHWEST PAD CORNER FOR THIS LOCATION.

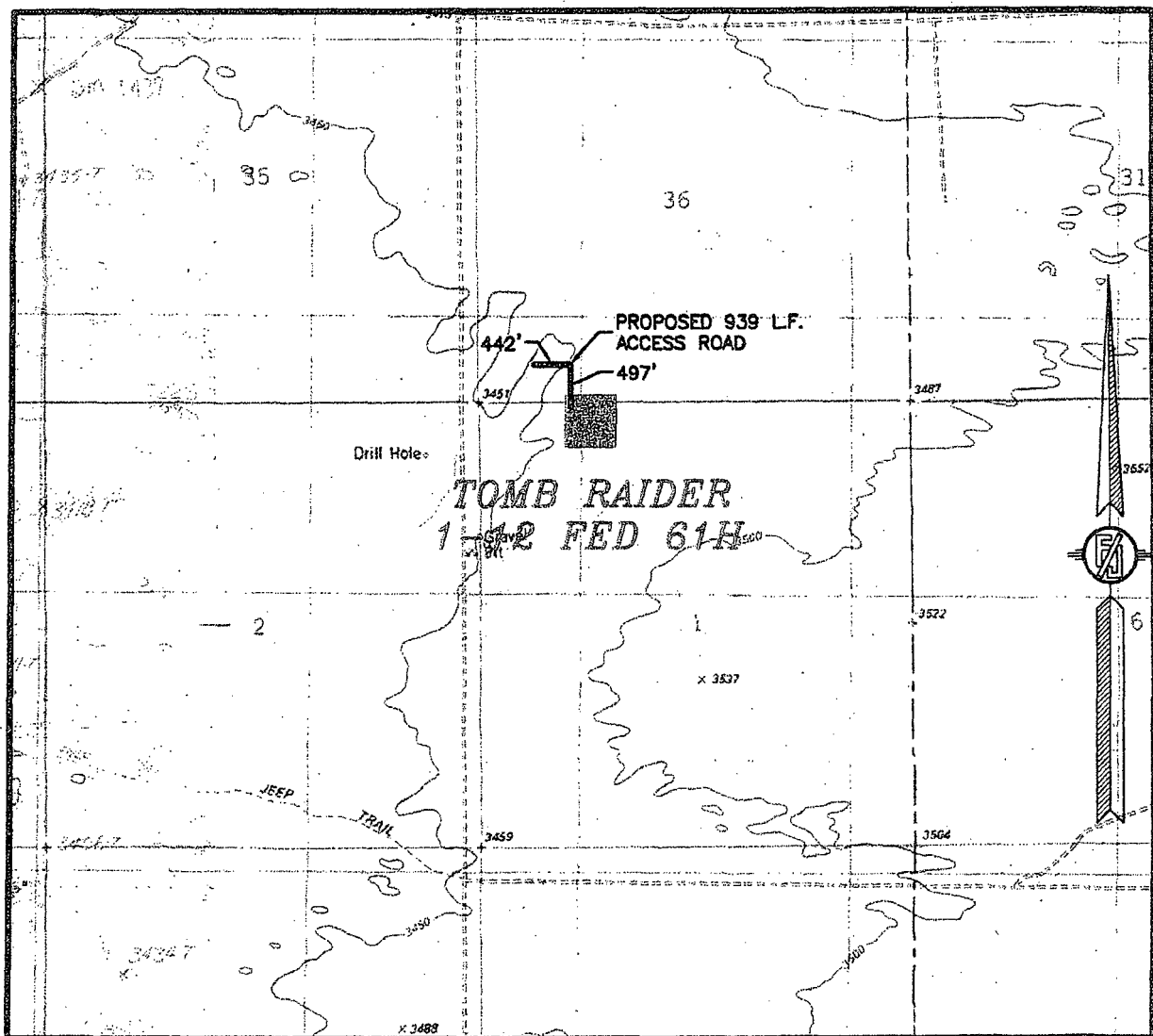
**DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 61H
LOCATED 200 FT. FROM THE NORTH LINE
AND 1310 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO**

JULY 19, 2016

SURVEY NO. 3553D

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

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



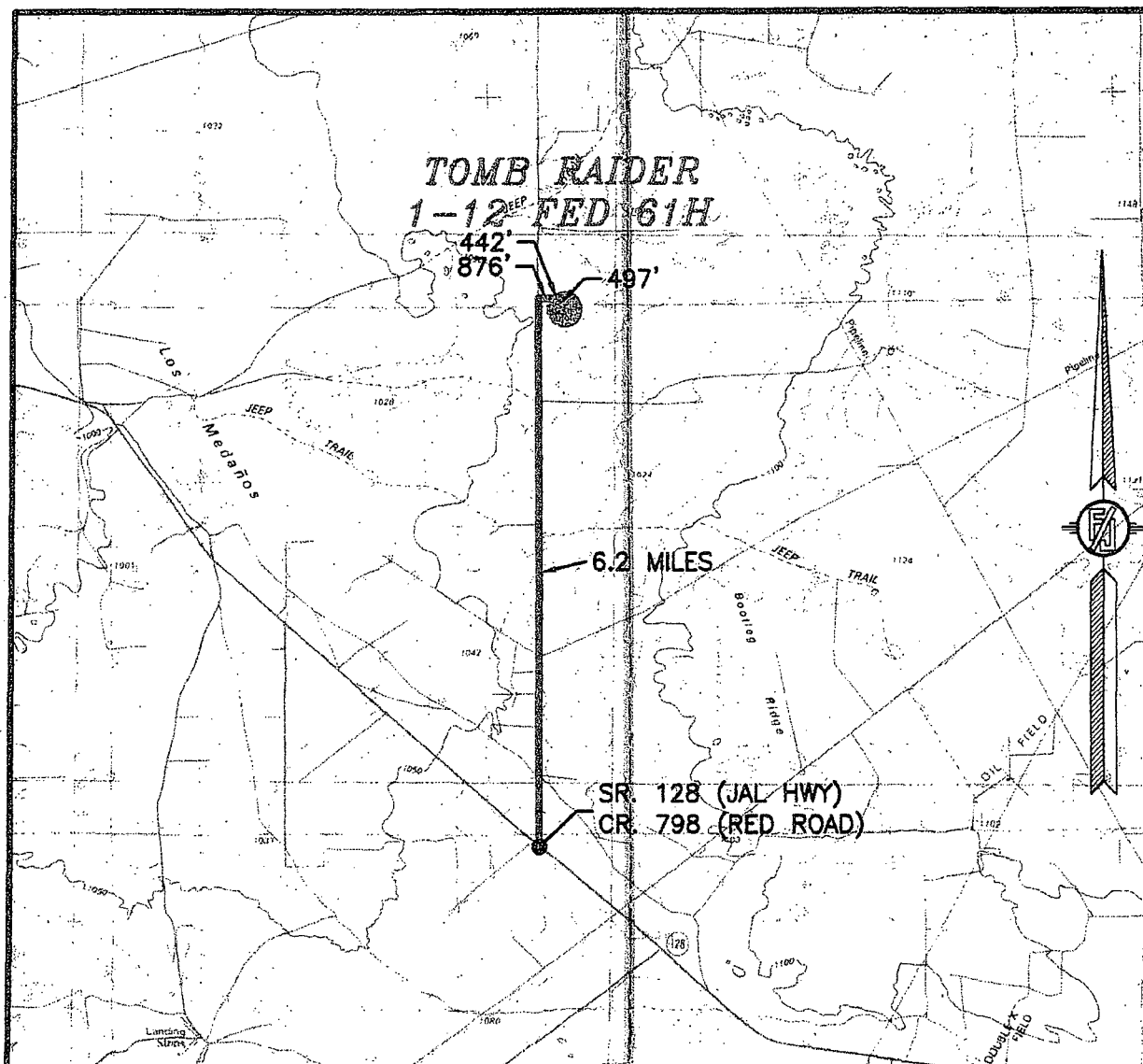
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RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 19, 2016

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

SURVEY NO. 3553D

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



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. 798 (RED ROAD) GO NORTH ON CR. 798 6.2 MILES TURN RIGHT ON CALICHE ROAD AND GO EAST 876' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS EAST 442' THEN SOUTH 497' TO THE PROPOSED NORTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 61H

LOCATED 200 FT. FROM THE NORTH LINE
AND 1310 FT. FROM THE WEST LINE OF

SECTION 1, TOWNSHIP 23 SOUTH,

RANGE 31 EAST, N.M.P.M.

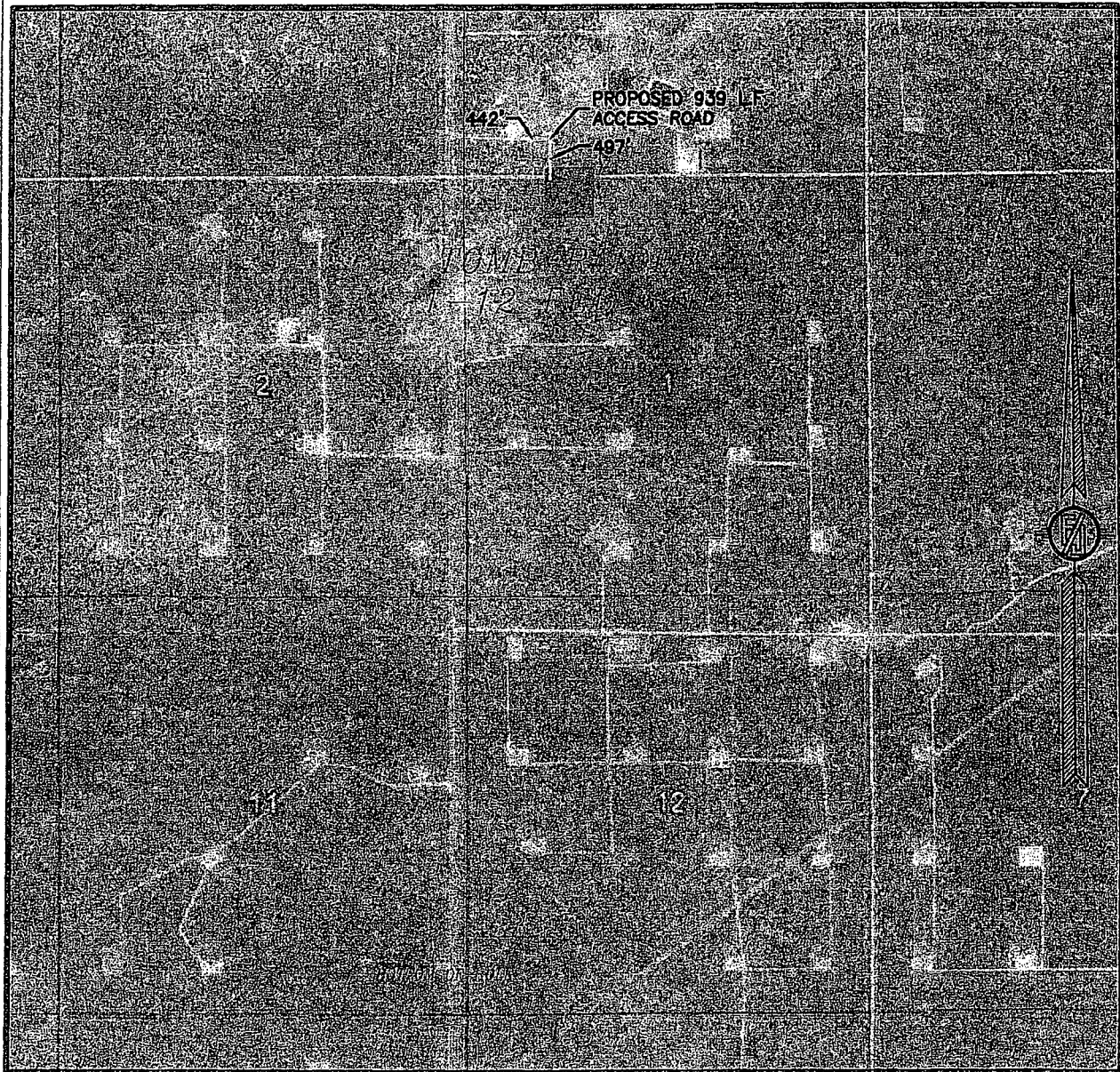
EDDY COUNTY, STATE OF NEW MEXICO

JULY 19, 2016

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

SURVEY NO. 3553D
CARLSBAD, NEW MEXICO

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



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2014

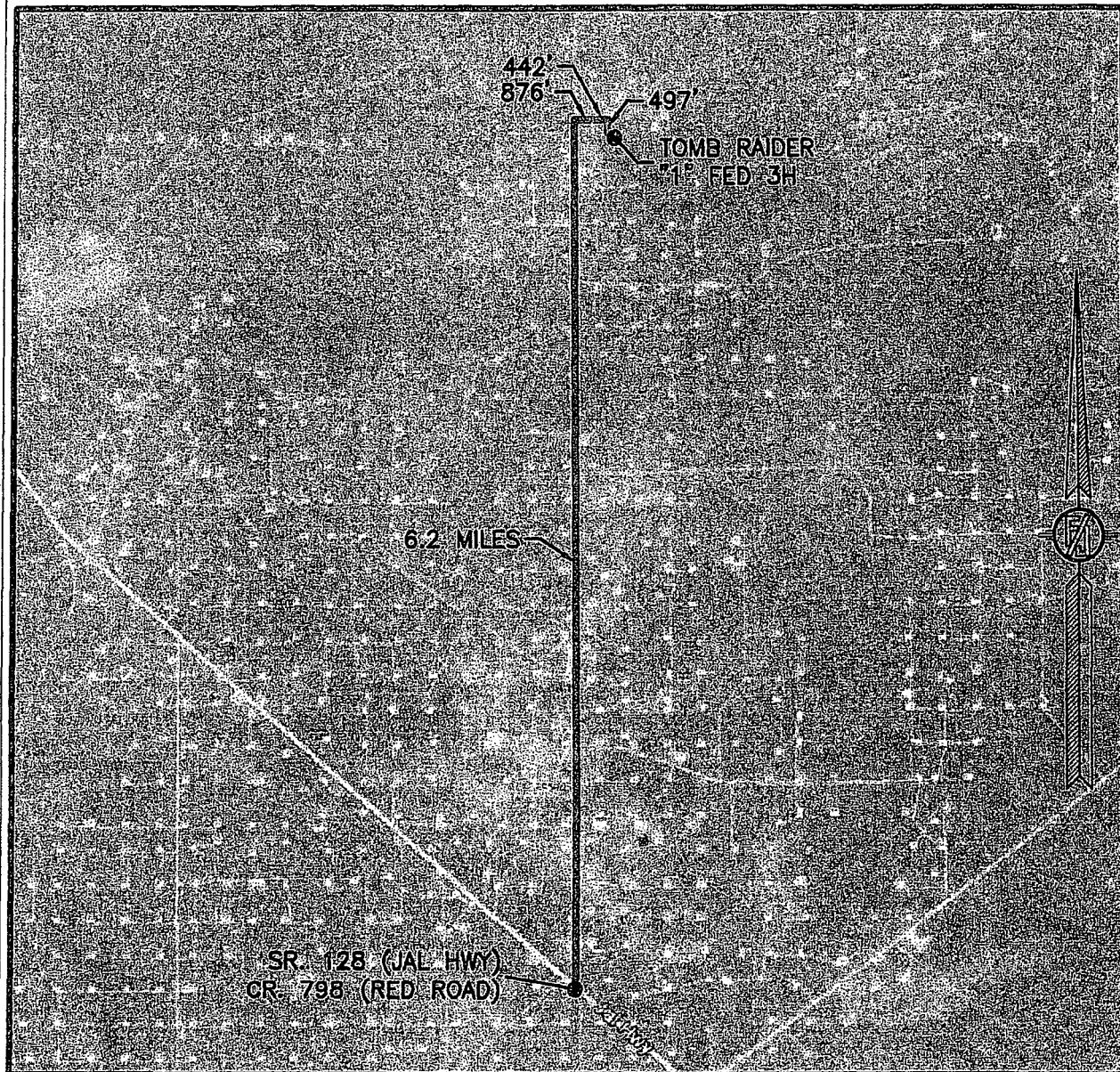
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 61H
LOCATED 200 FT. FROM THE NORTH LINE
AND 1310 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 19, 2016

SURVEY NO. 3553D

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

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



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 61H

LOCATED 200 FT. FROM THE NORTH LINE
AND 1310 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

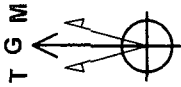
JULY 19, 2016

SURVEY NO. 3553D

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



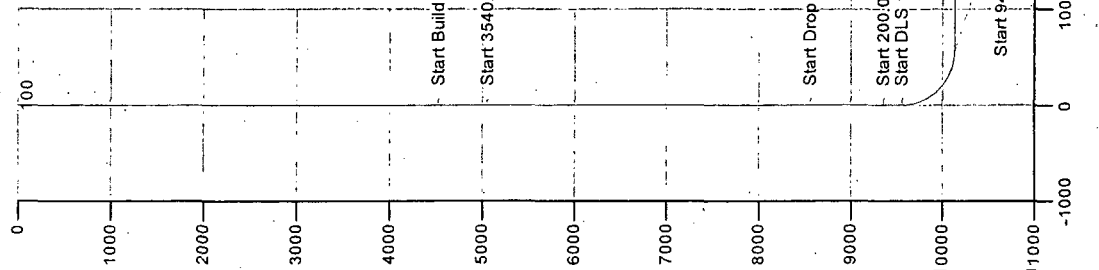
Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed
 Well: 61H
 Wellbore: OH
 Design: APD Plan #1



Azimuths to Grid North
 True North: -0.32°
 Magnetic North: 6.85°
 Magnetic Field
 Strength: 48398.6snT
 Dip Angle: 60.20°
 Date: 11/16/2015
 Model: HDGM



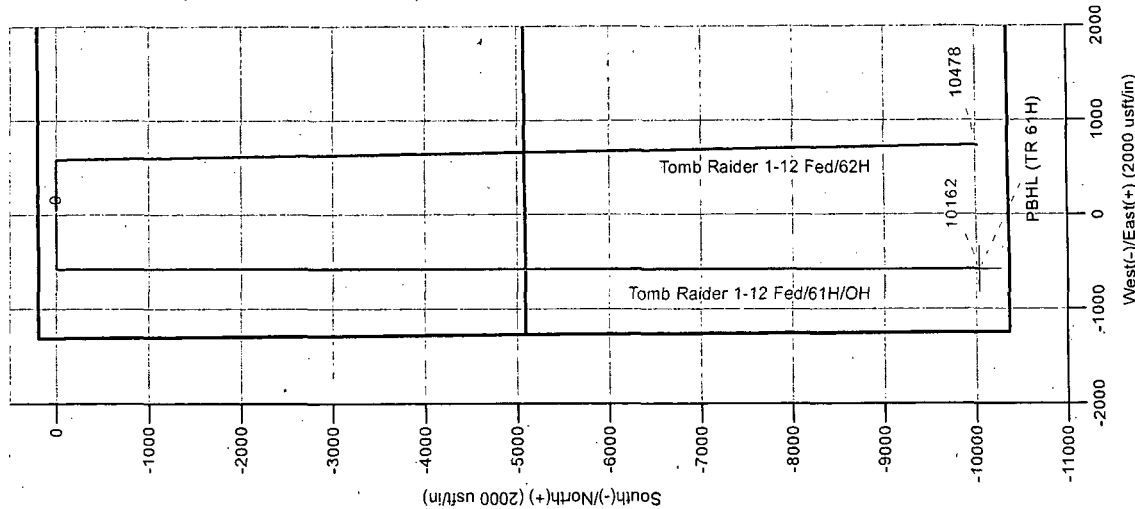
LEAM
 Drilling Systems LLC



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	

WELL DETAILS: 61H			
Northings	Ground Level:	Latitude	Longitude
488001.23	725875.87	32° 20' 24.618 N	103° 44' 8.928 W

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4524.39	0.00	0.00	4524.39	0.00	0.00	0.00	0.00	0.00	
5057.72	8.00	270.00	5055.99	0.00	-37.17	1.50	270.00	0.00	
8597.72	8.00	270.00	8561.54	0.00	-529.85	0.00	0.00	0.00	
9397.72	0.00	0.00	9358.94	0.00	-585.61	1.00	180.00	0.00	
9597.72	0.00	0.00	9558.94	0.00	-585.61	0.00	0.00	0.00	
10495.91	85.82	180.00	10131.90	-571.14	-585.63	10.00	180.00	571.14	
19956.43	85.82	180.00	10161.90	-10031.62	-585.97	0.00	0.00	10031.62	



NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 11 2016

RECEIVED

DEVON ENERGY

Eddy County, NM (NAD-83)

Tomb Raider 1-12 Fed

61H

OH

Plan: APD Plan #1

Standard Planning Report

15 September, 2016

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 61H
Company:	DEVON ENERGY	TVD Reference:	3453.9' GE + 25' KB @ 3478.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3453.9' GE + 25' KB @ 3478.90usft
Site:	Tomb Raider 1-12 Fed	North Reference:	Grid
Well:	61H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	APD Plan #1		

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		
Site Position:	Map	Northings:	48,001.23 usft
From:		Easting:	725,875.87 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	31° 7' 50.249 N
		Longitude:	103° 44' 36.698 W
		Grid Convergence:	0.30 °

Well:	61H					
Well Position	+N/-S	440,000.00 usft	Northings:	488,001.23 usft	Latitude:	32° 20' 24.618 N
	+E/-W	0.00 usft	Easting:	725,875.87 usft	Longitude:	103° 44' 8.928 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,453.90 usft	Ground Level:	3,453.90 usft	

Wellbore:	OH				
Magnetics:	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	11/16/2015	7.17	60.20	48,399

Design:	APD Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	180.00

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	
4,524.39	0.00	0.00	4,524.39	0.00	0.00	0.00	0.00	0.00	0.00	
5,057.72	8.00	270.00	5,055.99	0.00	-37.17	1.50	1.50	0.00	270.00	
8,597.72	8.00	270.00	8,561.54	0.00	-529.85	0.00	0.00	0.00	0.00	
9,397.72	0.00	0.00	9,358.94	0.00	-585.61	1.00	-1.00	0.00	180.00	
9,597.72	0.00	0.00	9,558.94	0.00	-585.61	0.00	0.00	0.00	0.00	
10,495.91	89.82	180.00	10,131.90	-571.14	-585.63	10.00	10.00	-20.04	180.00	
19,956.43	89.82	180.00	10,161.90	-10,031.62	-585.97	0.00	0.00	0.00	0.00	PBHL (TR 61H)

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Single User Db
 Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed
 Well: 61H
 Wellbore: OH
 Design: APD Plan #1

Local Co-ordinate Reference: Well 61H
 TVD Reference: 3453.9' GE + 25' KB @ 3478.90usft
 MD Reference: 3453.9' GE + 25' KB @ 3478.90usft
 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
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
4,524.39	0.00	0.00	4,524.39	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	1.13	270.00	4,600.00	0.00	-0.75	0.00	1.50	1.50	0.00
4,700.00	2.63	270.00	4,699.94	0.00	-4.04	0.00	1.50	1.50	0.00
4,800.00	4.13	270.00	4,799.76	0.00	-9.94	0.00	1.50	1.50	0.00
4,900.00	5.63	270.00	4,899.40	0.00	-18.45	0.00	1.50	1.50	0.00
5,000.00	7.13	270.00	4,998.77	0.00	-29.57	0.00	1.50	1.50	0.00
5,057.72	8.00	270.00	5,055.99	0.00	-37.17	0.00	1.50	1.50	0.00
5,100.00	8.00	270.00	5,097.86	0.00	-43.06	0.00	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 61H
Company:	DEVON ENERGY	TVD Reference:	3453.9' GE + 25' KB @ 3478.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3453.9' GE + 25' KB @ 3478.90usft
Site:	Tomb Raider 1-12 Fed	North Reference:	Grid
Well:	61H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	APD Plan #1		

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)
5,200.00	8.00	270.00	5,196.88	0.00	-56.97	0.00	0.00	0.00	0.00
5,300.00	8.00	270.00	5,295.91	0.00	-70.89	0.00	0.00	0.00	0.00
5,400.00	8.00	270.00	5,394.94	0.00	-84.81	0.00	0.00	0.00	0.00
5,500.00	8.00	270.00	5,493.96	0.00	-98.73	0.00	0.00	0.00	0.00
5,600.00	8.00	270.00	5,592.99	0.00	-112.64	0.00	0.00	0.00	0.00
5,700.00	8.00	270.00	5,692.02	0.00	-126.56	0.00	0.00	0.00	0.00
5,800.00	8.00	270.00	5,791.05	0.00	-140.48	0.00	0.00	0.00	0.00
5,900.00	8.00	270.00	5,890.07	0.00	-154.40	0.00	0.00	0.00	0.00
6,000.00	8.00	270.00	5,989.10	0.00	-168.31	0.00	0.00	0.00	0.00
6,100.00	8.00	270.00	6,088.13	0.00	-182.23	0.00	0.00	0.00	0.00
6,200.00	8.00	270.00	6,187.15	0.00	-196.15	0.00	0.00	0.00	0.00
6,300.00	8.00	270.00	6,286.18	0.00	-210.06	0.00	0.00	0.00	0.00
6,400.00	8.00	270.00	6,385.21	0.00	-223.98	0.00	0.00	0.00	0.00
6,500.00	8.00	270.00	6,484.23	0.00	-237.90	0.00	0.00	0.00	0.00
6,600.00	8.00	270.00	6,583.26	0.00	-251.82	0.00	0.00	0.00	0.00
6,700.00	8.00	270.00	6,682.29	0.00	-265.73	0.00	0.00	0.00	0.00
6,800.00	8.00	270.00	6,781.31	0.00	-279.65	0.00	0.00	0.00	0.00
6,900.00	8.00	270.00	6,880.34	0.00	-293.57	0.00	0.00	0.00	0.00
7,000.00	8.00	270.00	6,979.37	0.00	-307.49	0.00	0.00	0.00	0.00
7,100.00	8.00	270.00	7,078.39	0.00	-321.40	0.00	0.00	0.00	0.00
7,200.00	8.00	270.00	7,177.42	0.00	-335.32	0.00	0.00	0.00	0.00
7,300.00	8.00	270.00	7,276.45	0.00	-349.24	0.00	0.00	0.00	0.00
7,400.00	8.00	270.00	7,375.47	0.00	-363.16	0.00	0.00	0.00	0.00
7,500.00	8.00	270.00	7,474.50	0.00	-377.07	0.00	0.00	0.00	0.00
7,600.00	8.00	270.00	7,573.53	0.00	-390.99	0.00	0.00	0.00	0.00
7,700.00	8.00	270.00	7,672.55	0.00	-404.91	0.00	0.00	0.00	0.00
7,800.00	8.00	270.00	7,771.58	0.00	-418.82	0.00	0.00	0.00	0.00
7,900.00	8.00	270.00	7,870.61	0.00	-432.74	0.00	0.00	0.00	0.00
8,000.00	8.00	270.00	7,969.63	0.00	-446.66	0.00	0.00	0.00	0.00
8,100.00	8.00	270.00	8,068.66	0.00	-460.58	0.00	0.00	0.00	0.00
8,200.00	8.00	270.00	8,167.69	0.00	-474.49	0.00	0.00	0.00	0.00
8,300.00	8.00	270.00	8,266.72	0.00	-488.41	0.00	0.00	0.00	0.00
8,400.00	8.00	270.00	8,365.74	0.00	-502.33	0.00	0.00	0.00	0.00
8,500.00	8.00	270.00	8,464.77	0.00	-516.25	0.00	0.00	0.00	0.00
8,597.72	8.00	270.00	8,561.54	0.00	-529.85	0.00	0.00	0.00	0.00
8,600.00	7.98	270.00	8,563.80	0.00	-530.16	0.00	1.00	-1.00	0.00
8,700.00	6.98	270.00	8,662.94	0.00	-543.18	0.00	1.00	-1.00	0.00
8,800.00	5.98	270.00	8,762.30	0.00	-554.46	0.00	1.00	-1.00	0.00
8,900.00	4.98	270.00	8,861.85	0.00	-564.00	0.00	1.00	-1.00	0.00
9,000.00	3.98	270.00	8,961.54	0.00	-571.81	0.00	1.00	-1.00	0.00
9,100.00	2.98	270.00	9,061.36	0.00	-577.87	0.00	1.00	-1.00	0.00
9,200.00	1.98	270.00	9,161.26	0.00	-582.19	0.00	1.00	-1.00	0.00
9,300.00	0.98	270.00	9,261.23	0.00	-584.77	0.00	1.00	-1.00	0.00
9,397.72	0.00	0.00	9,358.94	0.00	-585.61	0.00	1.00	-1.00	0.00
9,400.00	0.00	0.00	9,361.22	0.00	-585.61	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,461.22	0.00	-585.61	0.00	0.00	0.00	0.00
9,597.72	0.00	0.00	9,558.94	0.00	-585.61	0.00	0.00	0.00	0.00
9,600.00	0.23	180.00	9,561.22	0.00	-585.61	0.00	10.00	10.00	0.00
9,650.00	5.23	180.00	9,611.15	-2.38	-585.61	2.38	10.00	10.00	0.00
9,700.00	10.23	180.00	9,660.68	-9.10	-585.61	9.10	10.00	10.00	0.00
9,750.00	15.23	180.00	9,709.43	-20.12	-585.61	20.12	10.00	10.00	0.00
9,800.00	20.23	180.00	9,757.05	-35.34	-585.61	35.34	10.00	10.00	0.00
9,850.00	25.23	180.00	9,803.15	-54.65	-585.61	54.65	10.00	10.00	0.00
9,900.00	30.23	180.00	9,847.39	-77.90	-585.61	77.90	10.00	10.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Single User Db
 Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed
 Well: 61H
 Wellbore: OH
 Design: APD Plan #1

Local Co-ordinate Reference: Well 61H
 TVD Reference: 3453.9' GE + 25' KB @ 3478.90usft
 MD Reference: 3453.9' GE + 25' KB @ 3478.90usft
 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)	
9,950.00	35.23	180.00	9,889.44	-104.93	-585.61	104.93	10.00	10.00	0.00	
10,000.00	40.23	180.00	9,928.98	-135.51	-585.61	135.51	10.00	10.00	0.00	
10,050.00	45.23	180.00	9,965.69	-169.43	-585.61	169.43	10.00	10.00	0.00	
10,100.00	50.23	180.00	9,999.32	-206.41	-585.61	206.41	10.00	10.00	0.00	
10,150.00	55.23	180.00	10,029.59	-246.19	-585.61	246.19	10.00	10.00	0.00	
10,200.00	60.23	180.00	10,056.27	-288.45	-585.62	288.45	10.00	10.00	0.00	
10,250.00	65.23	180.00	10,079.18	-332.88	-585.62	332.88	10.00	10.00	0.00	
10,300.00	70.23	180.00	10,098.12	-379.14	-585.62	379.14	10.00	10.00	0.00	
10,350.00	75.23	180.00	10,112.96	-426.87	-585.62	426.87	10.00	10.00	0.00	
10,400.00	80.23	180.00	10,123.59	-475.71	-585.62	475.71	10.00	10.00	0.00	
10,450.00	85.23	180.00	10,129.92	-525.29	-585.62	525.29	10.00	10.00	0.00	
10,495.91	89.82	180.00	10,131.90	-571.14	-585.63	571.14	10.00	10.00	0.00	
10,500.00	89.82	180.00	10,131.91	-575.23	-585.63	575.23	0.00	0.00	0.00	
10,600.00	89.82	180.00	10,132.23	-675.23	-585.63	675.23	0.00	0.00	0.00	
10,700.00	89.82	180.00	10,132.55	-775.23	-585.63	775.23	0.00	0.00	0.00	
10,800.00	89.82	180.00	10,132.86	-875.23	-585.64	875.23	0.00	0.00	0.00	
10,900.00	89.82	180.00	10,133.18	-975.23	-585.64	975.23	0.00	0.00	0.00	
11,000.00	89.82	180.00	10,133.50	-1,075.23	-585.64	1,075.23	0.00	0.00	0.00	
11,100.00	89.82	180.00	10,133.82	-1,175.23	-585.65	1,175.23	0.00	0.00	0.00	
11,200.00	89.82	180.00	10,134.13	-1,275.23	-585.65	1,275.23	0.00	0.00	0.00	
11,300.00	89.82	180.00	10,134.45	-1,375.23	-585.66	1,375.23	0.00	0.00	0.00	
11,400.00	89.82	180.00	10,134.77	-1,475.23	-585.66	1,475.23	0.00	0.00	0.00	
11,500.00	89.82	180.00	10,135.08	-1,575.23	-585.66	1,575.23	0.00	0.00	0.00	
11,600.00	89.82	180.00	10,135.40	-1,675.23	-585.67	1,675.23	0.00	0.00	0.00	
11,700.00	89.82	180.00	10,135.72	-1,775.23	-585.67	1,775.23	0.00	0.00	0.00	
11,800.00	89.82	180.00	10,136.03	-1,875.23	-585.67	1,875.23	0.00	0.00	0.00	
11,900.00	89.82	180.00	10,136.35	-1,975.23	-585.68	1,975.23	0.00	0.00	0.00	
12,000.00	89.82	180.00	10,136.67	-2,075.23	-585.68	2,075.23	0.00	0.00	0.00	
12,100.00	89.82	180.00	10,136.99	-2,175.23	-585.68	2,175.23	0.00	0.00	0.00	
12,200.00	89.82	180.00	10,137.30	-2,275.23	-585.69	2,275.23	0.00	0.00	0.00	
12,300.00	89.82	180.00	10,137.62	-2,375.23	-585.69	2,375.23	0.00	0.00	0.00	
12,400.00	89.82	180.00	10,137.94	-2,475.22	-585.70	2,475.22	0.00	0.00	0.00	
12,500.00	89.82	180.00	10,138.25	-2,575.22	-585.70	2,575.22	0.00	0.00	0.00	
12,600.00	89.82	180.00	10,138.57	-2,675.22	-585.70	2,675.22	0.00	0.00	0.00	
12,700.00	89.82	180.00	10,138.89	-2,775.22	-585.71	2,775.22	0.00	0.00	0.00	
12,800.00	89.82	180.00	10,139.21	-2,875.22	-585.71	2,875.22	0.00	0.00	0.00	
12,900.00	89.82	180.00	10,139.52	-2,975.22	-585.71	2,975.22	0.00	0.00	0.00	
13,000.00	89.82	180.00	10,139.84	-3,075.22	-585.72	3,075.22	0.00	0.00	0.00	
13,100.00	89.82	180.00	10,140.16	-3,175.22	-585.72	3,175.22	0.00	0.00	0.00	
13,200.00	89.82	180.00	10,140.47	-3,275.22	-585.72	3,275.22	0.00	0.00	0.00	
13,300.00	89.82	180.00	10,140.79	-3,375.22	-585.73	3,375.22	0.00	0.00	0.00	
13,400.00	89.82	180.00	10,141.11	-3,475.22	-585.73	3,475.22	0.00	0.00	0.00	
13,500.00	89.82	180.00	10,141.43	-3,575.22	-585.74	3,575.22	0.00	0.00	0.00	
13,600.00	89.82	180.00	10,141.74	-3,675.22	-585.74	3,675.22	0.00	0.00	0.00	
13,700.00	89.82	180.00	10,142.06	-3,775.22	-585.74	3,775.22	0.00	0.00	0.00	
13,800.00	89.82	180.00	10,142.38	-3,875.22	-585.75	3,875.22	0.00	0.00	0.00	
13,900.00	89.82	180.00	10,142.69	-3,975.22	-585.75	3,975.22	0.00	0.00	0.00	
14,000.00	89.82	180.00	10,143.01	-4,075.22	-585.75	4,075.22	0.00	0.00	0.00	
14,100.00	89.82	180.00	10,143.33	-4,175.22	-585.76	4,175.22	0.00	0.00	0.00	
14,200.00	89.82	180.00	10,143.65	-4,275.22	-585.76	4,275.22	0.00	0.00	0.00	
14,300.00	89.82	180.00	10,143.96	-4,375.22	-585.76	4,375.22	0.00	0.00	0.00	
14,400.00	89.82	180.00	10,144.28	-4,475.21	-585.77	4,475.21	0.00	0.00	0.00	
14,500.00	89.82	180.00	10,144.60	-4,575.21	-585.77	4,575.21	0.00	0.00	0.00	
14,600.00	89.82	180.00	10,144.91	-4,675.21	-585.78	4,675.21	0.00	0.00	0.00	

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Single User Db
 Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Tomb Raider 1-12 Fed
 Well: 61H
 Wellbore: OH
 Design: APD Plan #1

Local Co-ordinate Reference: Well 61H
 TVD Reference: 3453.9' GE + 25' KB @ 3478.90usft
 MD Reference: 3453.9' GE + 25' KB @ 3478.90usft
 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)
14,700.00	89.82	180.00	10,145.23	-4,775.21	-585.78	4,775.21	0.00	0.00	0.00
14,800.00	89.82	180.00	10,145.55	-4,875.21	-585.78	4,875.21	0.00	0.00	0.00
14,900.00	89.82	180.00	10,145.87	-4,975.21	-585.79	4,975.21	0.00	0.00	0.00
15,000.00	89.82	180.00	10,146.18	-5,075.21	-585.79	5,075.21	0.00	0.00	0.00
15,100.00	89.82	180.00	10,146.50	-5,175.21	-585.79	5,175.21	0.00	0.00	0.00
15,200.00	89.82	180.00	10,146.82	-5,275.21	-585.80	5,275.21	0.00	0.00	0.00
15,300.00	89.82	180.00	10,147.13	-5,375.21	-585.80	5,375.21	0.00	0.00	0.00
15,400.00	89.82	180.00	10,147.45	-5,475.21	-585.80	5,475.21	0.00	0.00	0.00
15,500.00	89.82	180.00	10,147.77	-5,575.21	-585.81	5,575.21	0.00	0.00	0.00
15,600.00	89.82	180.00	10,148.09	-5,675.21	-585.81	5,675.21	0.00	0.00	0.00
15,700.00	89.82	180.00	10,148.40	-5,775.21	-585.82	5,775.21	0.00	0.00	0.00
15,800.00	89.82	180.00	10,148.72	-5,875.21	-585.82	5,875.21	0.00	0.00	0.00
15,900.00	89.82	180.00	10,149.04	-5,975.21	-585.82	5,975.21	0.00	0.00	0.00
16,000.00	89.82	180.00	10,149.35	-6,075.21	-585.83	6,075.21	0.00	0.00	0.00
16,100.00	89.82	180.00	10,149.67	-6,175.21	-585.83	6,175.21	0.00	0.00	0.00
16,200.00	89.82	180.00	10,149.99	-6,275.21	-585.83	6,275.21	0.00	0.00	0.00
16,300.00	89.82	180.00	10,150.31	-6,375.21	-585.84	6,375.21	0.00	0.00	0.00
16,400.00	89.82	180.00	10,150.62	-6,475.20	-585.84	6,475.20	0.00	0.00	0.00
16,500.00	89.82	180.00	10,150.94	-6,575.20	-585.84	6,575.20	0.00	0.00	0.00
16,600.00	89.82	180.00	10,151.26	-6,675.20	-585.85	6,675.20	0.00	0.00	0.00
16,700.00	89.82	180.00	10,151.57	-6,775.20	-585.85	6,775.20	0.00	0.00	0.00
16,800.00	89.82	180.00	10,151.89	-6,875.20	-585.86	6,875.20	0.00	0.00	0.00
16,900.00	89.82	180.00	10,152.21	-6,975.20	-585.86	6,975.20	0.00	0.00	0.00
17,000.00	89.82	180.00	10,152.52	-7,075.20	-585.86	7,075.20	0.00	0.00	0.00
17,100.00	89.82	180.00	10,152.84	-7,175.20	-585.87	7,175.20	0.00	0.00	0.00
17,200.00	89.82	180.00	10,153.16	-7,275.20	-585.87	7,275.20	0.00	0.00	0.00
17,300.00	89.82	180.00	10,153.48	-7,375.20	-585.87	7,375.20	0.00	0.00	0.00
17,400.00	89.82	180.00	10,153.79	-7,475.20	-585.88	7,475.20	0.00	0.00	0.00
17,500.00	89.82	180.00	10,154.11	-7,575.20	-585.88	7,575.20	0.00	0.00	0.00
17,600.00	89.82	180.00	10,154.43	-7,675.20	-585.88	7,675.20	0.00	0.00	0.00
17,700.00	89.82	180.00	10,154.74	-7,775.20	-585.89	7,775.20	0.00	0.00	0.00
17,800.00	89.82	180.00	10,155.06	-7,875.20	-585.89	7,875.20	0.00	0.00	0.00
17,900.00	89.82	180.00	10,155.38	-7,975.20	-585.90	7,975.20	0.00	0.00	0.00
18,000.00	89.82	180.00	10,155.70	-8,075.20	-585.90	8,075.20	0.00	0.00	0.00
18,100.00	89.82	180.00	10,156.01	-8,175.20	-585.90	8,175.20	0.00	0.00	0.00
18,200.00	89.82	180.00	10,156.33	-8,275.20	-585.91	8,275.20	0.00	0.00	0.00
18,300.00	89.82	180.00	10,156.65	-8,375.20	-585.91	8,375.20	0.00	0.00	0.00
18,400.00	89.82	180.00	10,156.96	-8,475.19	-585.91	8,475.19	0.00	0.00	0.00
18,500.00	89.82	180.00	10,157.28	-8,575.19	-585.92	8,575.19	0.00	0.00	0.00
18,600.00	89.82	180.00	10,157.60	-8,675.19	-585.92	8,675.19	0.00	0.00	0.00
18,700.00	89.82	180.00	10,157.92	-8,775.19	-585.92	8,775.19	0.00	0.00	0.00
18,800.00	89.82	180.00	10,158.23	-8,875.19	-585.93	8,875.19	0.00	0.00	0.00
18,900.00	89.82	180.00	10,158.55	-8,975.19	-585.93	8,975.19	0.00	0.00	0.00
19,000.00	89.82	180.00	10,158.87	-9,075.19	-585.94	9,075.19	0.00	0.00	0.00
19,100.00	89.82	180.00	10,159.18	-9,175.19	-585.94	9,175.19	0.00	0.00	0.00
19,200.00	89.82	180.00	10,159.50	-9,275.19	-585.94	9,275.19	0.00	0.00	0.00
19,300.00	89.82	180.00	10,159.82	-9,375.19	-585.95	9,375.19	0.00	0.00	0.00
19,400.00	89.82	180.00	10,160.14	-9,475.19	-585.95	9,475.19	0.00	0.00	0.00
19,500.00	89.82	180.00	10,160.45	-9,575.19	-585.95	9,575.19	0.00	0.00	0.00
19,600.00	89.82	180.00	10,160.77	-9,675.19	-585.96	9,675.19	0.00	0.00	0.00
19,700.00	89.82	180.00	10,161.09	-9,775.19	-585.96	9,775.19	0.00	0.00	0.00
19,800.00	89.82	180.00	10,161.40	-9,875.19	-585.96	9,875.19	0.00	0.00	0.00
19,900.00	89.82	180.00	10,161.72	-9,975.19	-585.97	9,975.19	0.00	0.00	0.00
19,956.43	89.82	180.00	10,161.90	-10,031.62	-585.97	10,031.62	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 61H
Company:	DEVON ENERGY	TVD Reference:	3453.9' GE + 25' KB @ 3478.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3453.9' GE + 25' KB @ 3478.90usft
Site:	Tomb Raider 1-12 Fed	North Reference:	Grid
Well:	61H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	APD Plan #1		

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)
PBHL (TR 61H)									

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (TR 61H)		0.00	0.00	10,161.90	-10,031.62	-585.97	477,969.61	725,289.90	32° 18' 45.384 N	103° 44' 16.408 W
- plan hits target center										
- Point										

Devon Energy, Tomb Raider 1-12 Fed 61H

2. Casing Program

SEE CoA

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	700' 740'	13.375"	48	H-40	BTC	1.4	3.15	14.27
12.25"	0	4,250' 4400'	9.625"	40	J-55	LTC	1.14	1.75	2.99
8.75"	0	19,956'	5.5"	17	P-110	BTC	1.45	2.07	2.48
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	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 61H

1. Geologic Formations

TVD of target	10,162'	Pilot hole depth	N/A
MD at TD:	19,956'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	667		
Salado	1,107		
Base of Salt	4,204		
Delaware	4,455		
Bell Canyon	4,497		
Cherry Canyon	5,382		
Brushy Canyon	6,617		
1 st Bone Spring Limestone	8,377		
Leonard A	8,407		
Leonard B	8,722		
Leonard C	9,232		
1 st Bone Spring Sandstone	9,380		
2 nd Bone Spring Limestone	9,657		
2 nd Bone Spring Sandstone	9,972		
2 nd Bone Spring Sand Upper	10,082		

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

Devon Energy, Tomb Raider 1-12 Fed 61H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surf	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	910	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod Single Stage	520	9	13.5	3.31	21	Lead: Tuned Light® Cement
	<u>2310</u>	14.5	5.31	<u>1.2</u>	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Prod Two Stage	<u>450</u>	11.9	12.89	<u>2.31</u>	n/a	1 st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	<u>2310</u>	14.5	5.31	<u>1.2</u>	25	1 st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV Tool = 5000ft					
	<u>90</u>	11	14.81	<u>2.55</u>	22	2 nd Stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	<u>30</u>	14.8	6.32	<u>1.33</u>	6	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	75%
5-1/2" Production Casing Single Stage Option	4150' <u>3900'</u>	10%
5-1/2" Production Casing Two Stage Option	1 st Stage = 5000' / 2 nd Stage = 4150' <u>3900'</u>	10%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure 3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure 3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other *		
			Annular	x	
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other *		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Devon Energy, Tomb Raider 1-12 Fed 61H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. - Wellhead will be installed by wellhead representatives. - If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - Wellhead representative will install the test plug for the initial BOP test. - Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. - If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. - Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. - Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

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

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	700' 720'	FW Gel	8.6-8.8	28-34	N/C
700'	4,250' 4,400'	Saturated Brine	10.0-10.2	28-34	N/C
4,250'	19,956'	Cut Brine	8.5-9.3	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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6. Logging and Testing Procedures

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

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

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	PEX	
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7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4914 psi
Abnormal Temperature	No

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

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

N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe