

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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.
NMLC061863A

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
TRIONYX 6 FEDERAL 4H

9. API Well No.
30-025-40044

10. Field and Pool, or Exploratory
BONE SPRING; UPPER SHALE
PADUCA; DELAWARE, NORTH

11. County or Parish, and State
LEA COUNTY 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 CO., L.P.
Contact: TRINA C COUCH
E-Mail: TRINA.COUCH@DVN.COM

3a. Address
DEVON ENERGY PRODUCTION CO., L.P. 333 WEST STREET
OKLAHOMA CITY, OK 73102-5015

3b. Phone No. (include area code)
405-236-0728

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

Sec 6 T25S R32E 200FSL 2360FEL

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 APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 Production Company L.P. respectfully requests to make the following changes to the approved APD for the Trionyx 6 Federal 4H:

change SHL from 200/3Q 2360/E

Change SHL to 200 FSL & 2370 FWL, Sec.6 T25S, R32E

Change Formation from Avalon; Bone Spring to Delaware; Lower Brushy Canyon

**SUBJECT TO LIKE
APPROVAL BY STATE**

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

Surface OK - NRS OK 6-7-13

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

Electronic Submission #207609 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION CO., L.P., sent to the Hobbs

Name (Printed/Typed) TRINA C COUCH

Title REGULATORY ASSOCIATE

Signature (Electronic Submission)

Date 05/15/2013

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Stephen J. Coffey FOR

Title

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

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

JUN 18 2013

Additional data for EC transaction #207609 that would not fit on the form

32. Additional remarks, continued

Please see the following attachments:

C-102

Drilling/Cementing Program

Directional Survey

BOP Schematic

Geo-prog

TRIONYX 6 FED 4H – APD DRILLING PLAN
RJC 5.15.2013

Casing Program

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 – 750	13-3/8"	0 – 750	48#	STC	H-40
12-1/4"	750 – 4,455	9-5/8"	0 – 4,455	40#	LTC	J-55
8-3/4"	4,455 – 7,800	5-1/2"	0 – 7,600	17#	LTC	HCP-110
8-3/4"	7,800 – 12,857	5-1/2"	7,600 – 12,857	17#	BTC	HCP-110

Maximum TVD: 8,353

Design Factors:

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8"	1.98	4.44	7.88
9-5/8" 40# J-55 LTC	1.83	1.71	22.17
5-1/2" 17# HCP-110 LTC	2.19	3.12	4.4
5-1/2" 17# HCP-110 BTC	1.92	2.73	2.48

Mud Program:

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 – 750	8.4 – 9.0	30 – 34	N/C	FW
750 – 4,455	9.8 – 10.0	28 – 32	N/C	Brine
4,455 – 12,857	8.6 – 9.0	28 – 32	N/C	FW

Pressure Control Equipment:

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the intermediate casing shoe.

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**.

Cementing Program

13-3/8" Surface

Lead: 485 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.4% Fresh Water, 13.5 ppg,

Yield: 1.75 cf/sk

TOC @ surface.

Tail: 250 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water, 14.8 ppg

Yield: 1.35 cf/sk

9-5/8" Intermediate

Lead: 1,200 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 107.8% Fresh Water, 12.5 ppg

Yield: 2.04 cf/sk

TOC @ surface

Tail: 300 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 64.7% Water, 13.8 ppg

Yield: 1.37 cf/sk.

5-1/2" Production

1st Stage

Lead: 450 sacks (35:65) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 2% bwoc Bentonite + 0.6% bwoc Sodium Metasilicate + 0.5% bwoc FL-52A + 102.5% Fresh Water, 12.5 ppg

Yield: 2.01 cf/sk

Tail: 1,500 sacks (50:50) Poz (Fly Ash):Class H Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 58.3% Fresh Water, 14.2 ppg

Yield: 1.28 cf/sk

DV TOOL at 6,000 ft

2nd Stage

Lead: 250 sacks Class C Cement + 1% bwow Calcium Chloride + 0.125 lbs/sack Cello Flake + 157.8% Fresh Water, 11.4 ppg

Yield: 2.89 cf/sk

TOC @ 3,955 ft

Tail: 200 sacks (60:40) Poz (Fly Ash):Class C Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 63.2% Fresh Water, 13.8 ppg

Yield: 1.37cf/sk

TOC for All Strings:

Surface:	0
Intermediate:	0
Production:	3,955

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

DEVON ENERGY

Project: Lea County, NM (NAD-83)
 Site: Trionyx "6" Fed
 Well: 4H
 Wellbore: OH
 Design: Plan #2



Azimuths to Grid North
 True North: -0.33°
 Magnetic North: 7.08°

Magnetic Field
 Strength: 48366.1snT
 Dip Angle: 60.05°
 Date: 05/14/2013
 Model: IGRF2010

devon

DESIGN TARGET DETAILS

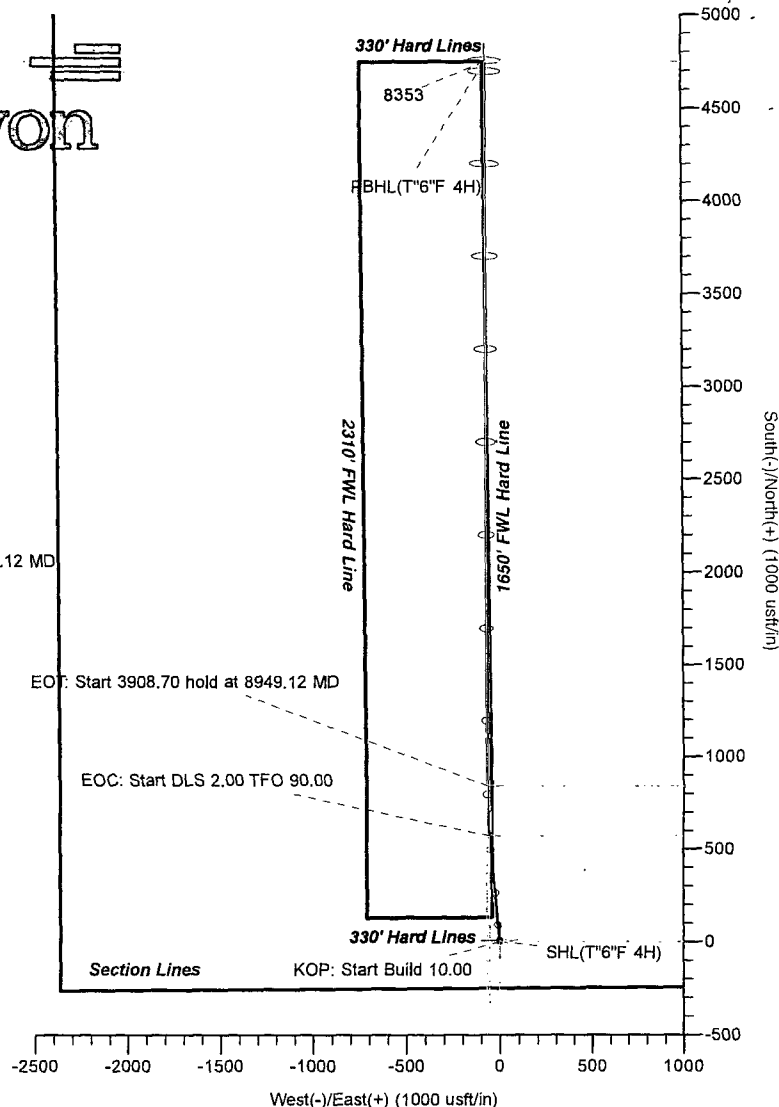
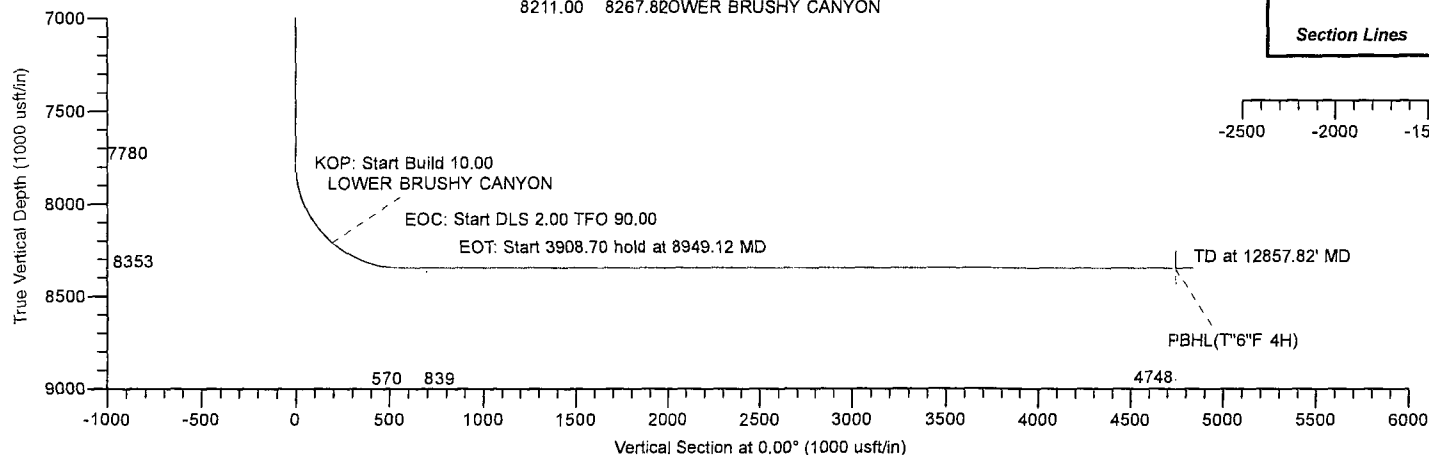
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(T"6"F 4H)	2.00	0.00	0.00	419810.39	732597.87	32° 9' 9.461 N	103° 42' 55.152 W
SHL(T"6"F 6H)	3.00	-47.22	700.21	419763.17	733298.08	32° 9' 8.954 N	103° 42' 47.010 W
PBHL(T"6"F 4H)	8353.00	4747.81	-66.36	424558.20	732531.51	32° 9' 56.447 N	103° 42' 55.607 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7780.04	0.00	0.00	7780.04	0.00	0.00	0.00	0.00	0.00	KOP: Start Build 10.00
3	8680.04	90.00	354.62	8353.00	570.43	-53.74	10.00	354.62	570.43	EOC: Start DLS 2.00 TFO 90.00
4	8949.12	90.00	0.00	8353.00	839.11	-66.36	2.00	90.00	839.11	EOT: Start 3908.70 hold at 8949.12 MD
5	12857.82	90.00	0.00	8353.00	4747.81	-66.36	0.00	0.00	4747.81	TD at 12857.82' MD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
53.00	53.00	QUATERNARY
773.00	773.00	RUSTLER DOL.
1092.00	1092.00	SALADO SALT
1181.00	1181.00	TOP OF SALT
4310.00	4310.00	BASE OF SALT
4552.00	4552.00	DELAWARE
4589.00	4589.00	BELL CANYON
5499.00	5499.00	CHERRY CANYON
6817.00	6817.00	BRUSHY CANYON
8211.00	8267.82	LOWER BRUSHY CANYON



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

Plan: Plan #2 (4H/OH)
 Trionyx "6" Fed
 Created By: Tyler Carlson Date: 14/25, May 15 2013
 Date: _____
 Approved: _____ Date: _____

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Project:	Lea County, NM, (NAD-83)	MD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Site:	Trionyx "6" Fed	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Project:	Lea 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:	Trionyx "6" Fed		
Site Position:		Northing:	419,774.49 usft
From:	Map	Easting:	734,923.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 9' 8.973 N
		Longitude:	103° 42' 28.107 W
		Grid Convergence:	0.33 °

Well:	4H		
Well Position	+N/-S	35.90 usft	Northing:
	+E/-W	-2,325.23 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,445.00 usft

Wellbore:	OH		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/14/13	7.41	60.05	48,366

Design:	Plan #2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00

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	
7,780.04	0.00	0.00	7,780.04	0.00	0.00	0.00	0.00	0.00	0.00	
8,680.04	90.00	354.62	8,353.00	570.43	-53.74	10.00	10.00	0.00	354.62	
8,949.12	90.00	0.00	8,353.00	839.11	-66.36	2.00	0.00	2.00	90.00	
12,857.82	90.00	0.00	8,353.00	4,747.81	-66.36	0.00	0.00	0.00	0.00	PBHL(T"6" 4H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Project:	Lea County, NM (NAD:83)	MD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Site:	Trionyx "6" Fed	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	QH		
Design:	Plan #2		

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
53.00	0.00	0.00	53.00	0.00	0.00	0.00	0.00	0.00	0.00
QUATERNARY									
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
773.00	0.00	0.00	773.00	0.00	0.00	0.00	0.00	0.00	0.00
RUSTLER DOL									
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
1,092.00	0.00	0.00	1,092.00	0.00	0.00	0.00	0.00	0.00	0.00
SALADO SALT									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,181.00	0.00	0.00	1,181.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP OF SALT									
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
4,310.00	0.00	0.00	4,310.00	0.00	0.00	0.00	0.00	0.00	0.00
BASE OF SALT									

LEAM Drilling Systems LLC

Planning Report

Database:	EDM: 5000.1 Single User Db	Local Co-ordinate Reference:	Well: 4H
Company:	DEVON ENERGY	TVD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Project:	Lea County, NM (NAD-83)	MD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Site:	Trionyx '8' Fed.	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
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
4,552.00	0.00	0.00	4,552.00	0.00	0.00	0.00	0.00	0.00	0.00
DELAWARE									
4,589.00	0.00	0.00	4,589.00	0.00	0.00	0.00	0.00	0.00	0.00
BELL CANYON									
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	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,499.00	0.00	0.00	5,499.00	0.00	0.00	0.00	0.00	0.00	0.00
CHERRY CANYON									
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,817.00	0.00	0.00	6,817.00	0.00	0.00	0.00	0.00	0.00	0.00
BRUSHY CANYON									
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,780.04	0.00	0.00	7,780.04	0.00	0.00	0.00	0.00	0.00	0.00
KOP: Start Build 10.00									
7,800.00	2.00	354.62	7,800.00	0.35	-0.03	0.35	10.00	10.00	0.00
7,850.00	7.00	354.62	7,849.83	4.25	-0.40	4.25	10.00	10.00	0.00
7,900.00	12.00	354.62	7,899.13	12.46	-1.17	12.46	10.00	10.00	0.00
7,950.00	17.00	354.62	7,947.52	24.91	-2.35	24.91	10.00	10.00	0.00
8,000.00	22.00	354.62	7,994.64	41.52	-3.91	41.52	10.00	10.00	0.00
8,050.00	27.00	354.62	8,040.12	62.15	-5.86	62.15	10.00	10.00	0.00
8,100.00	32.00	354.62	8,083.63	86.66	-8.16	86.66	10.00	10.00	0.00
8,150.00	37.00	354.62	8,124.82	114.84	-10.82	114.84	10.00	10.00	0.00
8,200.00	42.00	354.62	8,163.39	146.49	-13.80	146.49	10.00	10.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Project:	Lea County, NM (NAD-83)	MD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Site:	Trionyx "6" Fed	North Reference:	Grid:
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)	
8,250.00	47.00	354.62	8,199.05	181.37	-17.09	181.37	10.00	10.00	0.00	
8,267.82	48.78	354.62	8,211.00	194.53	-18.33	194.53	10.00	10.00	0.00	
LOWER BRUSHY CANYON										
8,300.00	52.00	354.62	8,231.51	219.21	-20.65	219.21	10.00	10.00	0.00	
8,350.00	57.00	354.62	8,260.54	259.72	-24.47	259.72	10.00	10.00	0.00	
8,400.00	62.00	354.62	8,285.91	302.59	-28.50	302.59	10.00	10.00	0.00	
8,450.00	67.00	354.62	8,307.44	347.51	-32.74	347.51	10.00	10.00	0.00	
8,500.00	72.00	354.62	8,324.94	394.12	-37.13	394.12	10.00	10.00	0.00	
8,550.00	77.00	354.62	8,338.31	442.07	-41.64	442.07	10.00	10.00	0.00	
8,600.00	82.00	354.62	8,347.42	491.00	-46.25	491.00	10.00	10.00	0.00	
8,650.00	87.00	354.62	8,352.21	540.54	-50.92	540.54	10.00	10.00	0.00	
8,680.04	90.00	354.62	8,353.00	570.43	-53.74	570.43	10.00	10.00	0.00	
EOC: Start DLS 2.00 TFO 90.00										
8,700.00	90.00	355.02	8,353.00	590.31	-55.54	590.31	2.00	0.00	2.00	
8,800.00	90.00	357.02	8,353.00	690.06	-62.48	690.06	2.00	0.00	2.00	
8,900.00	90.00	359.02	8,353.00	790.00	-65.94	790.00	2.00	0.00	2.00	
8,949.12	90.00	0.00	8,353.00	839.11	-66.36	839.11	2.00	0.00	2.00	
EOT: Start 3908.70 hold at 8949.12 MD										
9,000.00	90.00	0.00	8,353.00	889.99	-66.36	889.99	0.00	0.00	0.00	
9,100.00	90.00	0.00	8,353.00	989.99	-66.36	989.99	0.00	0.00	0.00	
9,200.00	90.00	0.00	8,353.00	1,089.99	-66.36	1,089.99	0.00	0.00	0.00	
9,300.00	90.00	0.00	8,353.00	1,189.99	-66.36	1,189.99	0.00	0.00	0.00	
9,400.00	90.00	0.00	8,353.00	1,289.99	-66.36	1,289.99	0.00	0.00	0.00	
9,500.00	90.00	0.00	8,353.00	1,389.99	-66.36	1,389.99	0.00	0.00	0.00	
9,600.00	90.00	0.00	8,353.00	1,489.99	-66.36	1,489.99	0.00	0.00	0.00	
9,700.00	90.00	0.00	8,353.00	1,589.99	-66.36	1,589.99	0.00	0.00	0.00	
9,800.00	90.00	0.00	8,353.00	1,689.99	-66.36	1,689.99	0.00	0.00	0.00	
9,900.00	90.00	0.00	8,353.00	1,789.99	-66.36	1,789.99	0.00	0.00	0.00	
10,000.00	90.00	0.00	8,353.00	1,889.99	-66.36	1,889.99	0.00	0.00	0.00	
10,100.00	90.00	0.00	8,353.00	1,989.99	-66.36	1,989.99	0.00	0.00	0.00	
10,200.00	90.00	0.00	8,353.00	2,089.99	-66.36	2,089.99	0.00	0.00	0.00	
10,300.00	90.00	0.00	8,353.00	2,189.99	-66.36	2,189.99	0.00	0.00	0.00	
10,400.00	90.00	0.00	8,353.00	2,289.99	-66.36	2,289.99	0.00	0.00	0.00	
10,500.00	90.00	0.00	8,353.00	2,389.99	-66.36	2,389.99	0.00	0.00	0.00	
10,600.00	90.00	0.00	8,353.00	2,489.99	-66.36	2,489.99	0.00	0.00	0.00	
10,700.00	90.00	0.00	8,353.00	2,589.99	-66.36	2,589.99	0.00	0.00	0.00	
10,800.00	90.00	0.00	8,353.00	2,689.99	-66.36	2,689.99	0.00	0.00	0.00	
10,900.00	90.00	0.00	8,353.00	2,789.99	-66.36	2,789.99	0.00	0.00	0.00	
11,000.00	90.00	0.00	8,353.00	2,889.99	-66.36	2,889.99	0.00	0.00	0.00	
11,100.00	90.00	0.00	8,353.00	2,989.99	-66.36	2,989.99	0.00	0.00	0.00	
11,200.00	90.00	0.00	8,353.00	3,089.99	-66.36	3,089.99	0.00	0.00	0.00	
11,300.00	90.00	0.00	8,353.00	3,189.99	-66.36	3,189.99	0.00	0.00	0.00	
11,400.00	90.00	0.00	8,353.00	3,289.99	-66.36	3,289.99	0.00	0.00	0.00	
11,500.00	90.00	0.00	8,353.00	3,389.99	-66.36	3,389.99	0.00	0.00	0.00	
11,600.00	90.00	0.00	8,353.00	3,489.99	-66.36	3,489.99	0.00	0.00	0.00	
11,700.00	90.00	0.00	8,353.00	3,589.99	-66.36	3,589.99	0.00	0.00	0.00	
11,800.00	90.00	0.00	8,353.00	3,689.99	-66.36	3,689.99	0.00	0.00	0.00	
11,900.00	90.00	0.00	8,353.00	3,789.99	-66.36	3,789.99	0.00	0.00	0.00	
12,000.00	90.00	0.00	8,353.00	3,889.99	-66.36	3,889.99	0.00	0.00	0.00	
12,100.00	90.00	0.00	8,353.00	3,989.99	-66.36	3,989.99	0.00	0.00	0.00	
12,200.00	90.00	0.00	8,353.00	4,089.99	-66.36	4,089.99	0.00	0.00	0.00	
12,300.00	90.00	0.00	8,353.00	4,189.99	-66.36	4,189.99	0.00	0.00	0.00	
12,400.00	90.00	0.00	8,353.00	4,289.99	-66.36	4,289.99	0.00	0.00	0.00	

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well: 4H
Company:	DEVON ENERGY	TVD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Project:	Lea County, NM (NAD-83)	MD Reference:	GE 3447' + 25' @ 3472.00usft (Cactus 105)
Site:	Trionyx "6' Fed"	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
12,500.00	90.00	0.00	8,353.00	4,389.99	-66.36	4,389.99	0.00	0.00	0.00
12,600.00	90.00	0.00	8,353.00	4,489.99	-66.36	4,489.99	0.00	0.00	0.00
12,700.00	90.00	0.00	8,353.00	4,589.99	-66.36	4,589.99	0.00	0.00	0.00
12,800.00	90.00	0.00	8,353.00	4,689.99	-66.36	4,689.99	0.00	0.00	0.00
12,857.82	90.00	0.00	8,353.00	4,747.81	-66.36	4,747.81	0.00	0.00	0.00
TD at 12857.82' MD									

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(T"6"F 4H)	0.00	0.00	2.00	0.00	0.00	419,810.39	732,597.87	32° 9' 9.461 N	103° 42' 55.152 W
- plan hits target center									
- Point									
PBHL(T"6"F 4H)	0.00	0.00	8,353.00	4,747.81	-66.36	424,558.20	732,531.51	32° 9' 56.447 N	103° 42' 55.607 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
53.00	53.00	QUATERNARY				
773.00	773.00	RUSTLER DOL.				
1,092.00	1,092.00	SALADO SALT				
1,181.00	1,181.00	TOP OF SALT				
4,310.00	4,310.00	BASE OF SALT				
4,552.00	4,552.00	DELAWARE				
4,589.00	4,589.00	BELL CANYON				
5,499.00	5,499.00	CHERRY CANYON				
6,817.00	6,817.00	BRUSHY CANYON				
8,267.82	8,211.00	LOWER BRUSHY CANYON				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,780.04	7,780.04	0.00	0.00	KOP: Start Build 10.00
8,680.04	8,353.00	570.43	-53.74	EOC: Start DLS 2.00 TFO 90.00
8,949.12	8,353.00	839.11	-66.36	EOT: Start 3908.70 hold at 8949.12 MD
12,857.82	8,353.00	4,747.81	-66.36	TD at 12857.82' MD

GEOLOGIC PROGNOSIS (Final)

WELL NAME: Trionyx 6 Fed. #4H API#: 30-025-40044
 SURFACE LOCATION: Sec 6-25S-32E, 200 FSL & 2370 FWL
 BOTTOM HOLE LOCATION: Sec. 6-25S-32E, BHL 330 FNL & 2325 FWL
 PLANNED TD: 12950' MD PRIMARY OBJECTIVE: Lower Brushy "B" Sand
 KB: 3444' GL: 3419' MUD: CUT BRINE (confirm on location) BIT: CASING:
 RIG: H&P #214 RIG CONTACT:
 PRODUCING FM.: Lower Brushy Canyon POOL NAME: PADUCA
 ESTIMATED BHP/BHT: 4200 psi 140degF PENETRATION PT.: Sec 6-25S-32E, 200 FSL & 2370 FWL

GEOLOGISTS: CRAIG HARRAN

office: 405-228-7711 cell (after hours/weekends): 405-626-2369
 mailing address: Devon Energy, 333 Sheridan Avenue, Office # 31.512, Oklahoma City, OK 73102-5010
 email: craig.harran@dvn.com

REFERENCE WELLS

WELL	LOCATION
Trionyx 6 Fed. 8H Pilot Hole (API 30025400480000)	200' FSL 635' FEL Sec 7-25S-32E
NO PILOT HOLE	

KNOWN OR POTENTIAL HAZARDS/REMARKS.

No known hazards.

GEOLOGIC MARKERS

KB:	FORMATION / CASING	PROGNOSIS		MUDLOG			E-LOG			NOTES
		MD	subsea	MD	subsea	hi/lo	MD	subsea	hi/lo	
	QUATERNARY	25	3419							
	RUSTLER DOL.	745	2699							
	SALADO SALT	1064	2380							
	TOP OF SALT	1153	2291							
	BASE OF SALT	4282	-838							
	DELAWARE	4524	-1080							
	BELL CANYON	4561	-1117							
	CHERRY CANYON	5471	-2027							
	BRUSHY CANYON	6789	-3345							
	LOWER BRUSHY CANYON	8183	-4739							
	LANDING DEPTH	8325	-4881							Primary Pay Target Oil
	VERTICAL DEPTH AT TD	8325	-4881							

MUDLOGGING PROGRAM

Paladin Surface Logging - TO BE CALLED OUT BY DRILLING SUPERVISOR

Divisional Supervisor: KEN BOHNERT (580-799-7944)

2 MAN SERVICE CASING TO TD. MORNING REPORT AT 9AM OKLAHOMA CITY TIME TO CRAIG HARRAN.

PROBABLE CORES AND/OR DST'S

FORMATION	APPROXIMATE DEPTH
No whole cores, sidewall cores, or DSTs planned.	

GEOLOGIC PROGNOSIS (Final)

WELL NAME: Trionyx 6 Fed. #4H API#: 30-025-40044
SURFACE LOCATION: Sec 6-25S-32E, 200 FSL & 2370 FWL
BOTTOM HOLE LOCATION: Sec. 6-25S-32E, BHL 330 FNL & 2325 FWL
PLANNED TD: 12950' MD PRIMARY OBJECTIVE: Lower Brushy "B" Sand
KB: 3444' GL: 3419' MUD: CUT BRINE (confirm on location) BIT: CASING:
RIG: H&P #214 RIG CONTACT:
PRODUCING FM.: Lower Brushy Canyon POOL NAME: PADUCA
ESTIMATED BHP/BHT: 4200 psi 140degF PENETRATION PT.: Sec 6-25S-32E, 200 FSL & 2370 FWL

GEOLOGISTS: CRAIG HARRAN

office: 405-228-7711 cell (after hours/weekends): 405-626-2369
email: craig.harran@dvn.com mailing address: Devon Energy, 333 Sheridan Avenue, Office # 31.512, Oklahoma City, OK 73102-5010

REFERENCE WELLS

WELL	LOCATION
<u>Trionyx 6 Fed. 8H Pilot Hole (API 30025400480000)</u>	<u>200' FSL 635' FEL Sec 7-25S-32E</u>
NO PILOT HOLE	

KNOWN OR POTENTIAL HAZARDS/REMARKS.

No known hazards.

GEOLOGIC MARKERS

KB:	FORMATION / CASING	3444'	PROGNOSIS		MUDLOG			E-LOG			NOTES
			MD	subsea	MD	subsea	hi/lo	MD	subsea	hi/lo	
	QUATERNARY		25	3419							
	RUSTLER DOL.		745	2699							
	SALADO SALT		1064	2380							
	TOP OF SALT		1153	2291							
	BASE OF SALT		4282	-838							
	DELAWARE		4524	-1080							
	BELL CANYON		4561	-1117							
	CHERRY CANYON		5471	-2027							
	BRUSHY CANYON		6789	-3345							
	LOWER BRUSHY CANYON		8183	-4739							
	LANDING DEPTH		8325	-4881							Primary Pay Target Oil
	VERTICAL DEPTH AT TD		8325	-4881							

MUDLOGGING PROGRAM

Paladin Surface Logging - TO BE CALLED OUT BY DRILLING SUPERVISOR

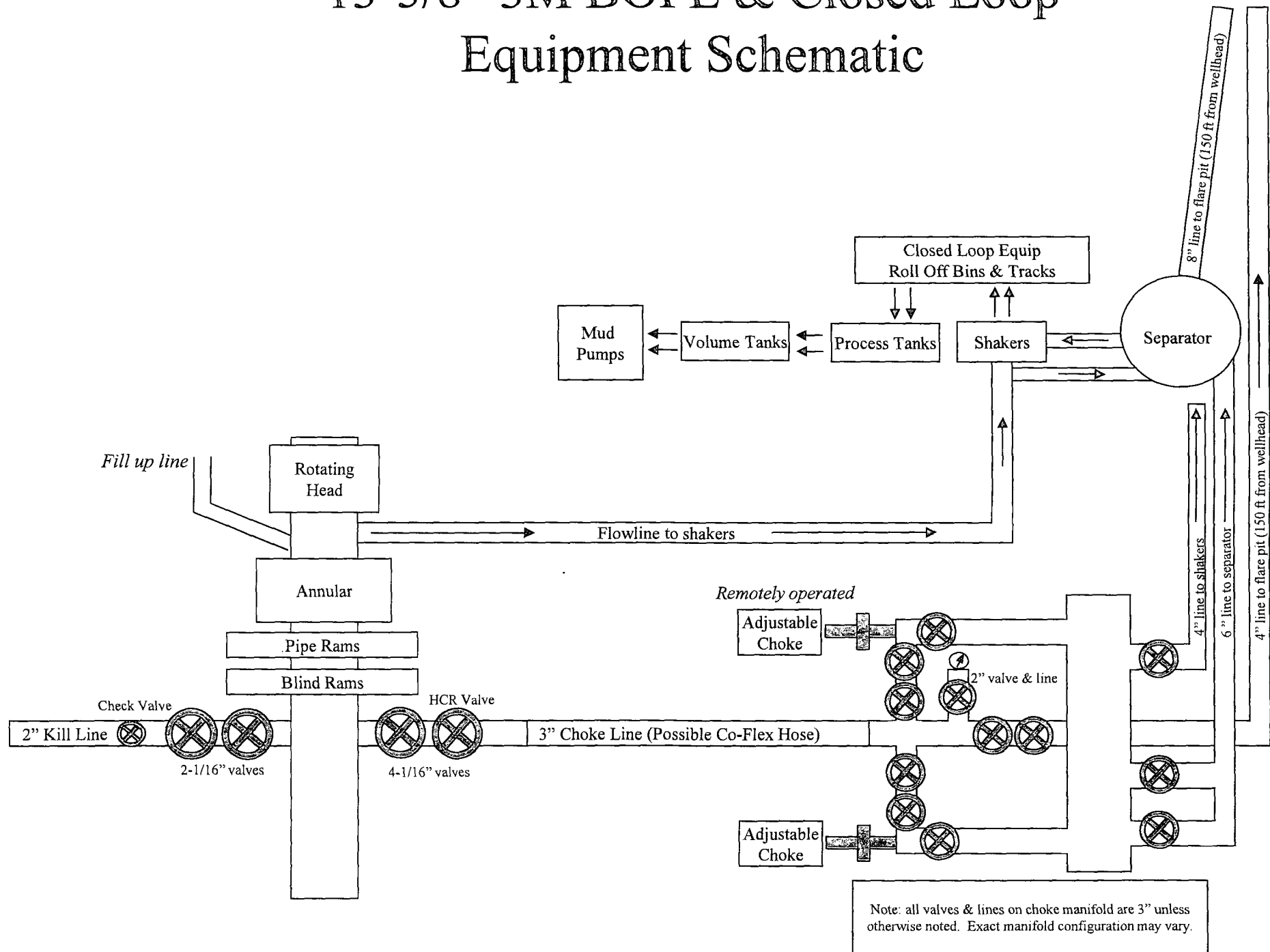
Divisional Supervisor: KEN BOHNERT (580-799-7944)

2 MAN SERVICE CASING TO TD. MORNING REPORT AT 9AM OKLAHOMA CITY TIME TO CRAIG HARRAN.

PROBABLE CORES AND/OR DST'S

FORMATION	APPROXIMATE DEPTH
<u>No whole cores, sidewall cores, or DSTs planned.</u>	

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



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY, LP
LEASE NO.:	LC061863A
WELL NAME & NO.:	TRIONYX 6 FEDERAL 4H
SURFACE HOLE FOOTAGE:	0200' FSL & 2360' FEL
BOTTOM HOLE FOOTAGE:	0330' FNL & 2325' FWL
LOCATION:	Section 6, T. 25 S., R. 32 E., NMPM
COUNTY:	LEA County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours 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)

☒ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**
2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. 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 is located, this does not include the dog house or stairway area.

4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. 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) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.** Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Possible lost circulation in the Delaware and Bone Spring.

Possible water and brine flows in the Salado, Castile, Delaware and Bone Spring.

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 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.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
This casing is to be set in the base of the Castile or Lamar Limestone formation at approximately 4455 feet.

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

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

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

Operator has proposed DV tool at depth of 6000'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

- 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 circulation on the next stage.

- b. Second stage above DV tool:

☒ Cement should tie-back at least **500** feet into previous casing string. Operator shall provide method of verification.

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.

C. 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. **Operator did not request variance for flex hose, but included documentation in APD for flex hose.** Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. 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. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- c. 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.
- d. The results of the test shall be reported to the appropriate BLM office.
- 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 if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

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