

Submit 1 Copy To Appropriate District Office

District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-43451
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, LP		6. State Oil & Gas Lease No.
3. Address of Operator 333 W. Sheridan Avenue Oklahoma City, OK 73102		7. Lease Name or Unit Agreement Name Thistle Unit
4. Well Location Unit Letter N : 621 feet from the South line and 2199 feet from the West line Section 34 Township 23S Range 33E NMPM Lea, County		8. Well Number 118H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3650		9. OGRID Number 6137
		10. Pool name or Wildcat Triple X; Bone Spring

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Devon Energy respectfully requests to change the bottom hole location from 2630 FSL & 2230 FWL to 2630 FSL & 2064 FWL, Sec. 27, T-23S, R-33E. Please see the attached revised C-102 and current Drilling Plan & Directional Survey.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Rebecca Deal TITLE Regulatory Analyst DATE 1/19/2017

Type or print name Rebecca Deal E-mail address: rebecca.deal@dvn.com PHONE: 405-228-88429
For State Use Only

APPROVED BY: [Signature] TITLE Petroleum Engineer DATE 01/25/17
Conditions of Approval (if any):

Devon Energy, Thistle Unit 118H

1. Geologic Formations

TVD of target	9,704'	Pilot hole depth	N/A
MD at TD:	17,369'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1,324		
Top of Salt	1,830		
Base of Salt	4,969		
Delaware	5,238		
Lower Brushy	8,973		
1 st Bone Spring Lime	9,129		
Leonard A	9,272		
Leonard B	9,639		
Leonard B Base	9,766		
Leonard C	9,942		

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

Devon Energy, Thistle Unit 118H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn .	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1,350'	13.375"	48	H-40	STC	1.18	2.64	8.05
12.25"	0	4,300'	9.625"	40	J-55	BTC	1.15	1.77	4.15
12.25"	4,300'	5,100'	9.625"	40	HCK-55	BTC	1.58	1.47	4.50
8.75"	0	17,369'	5.5"	17	P-110	BTC	1.56	1.93	2.09
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, Thistle Unit 118H

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" Surface	680	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
	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
13-3/8" Surface Two Stage	460	12.9	9.81	1.85	14	1 st Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	1 st Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = 300ft					
	320	14.8	6.32	1.33	6	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1060	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	405	10.9	20.6	3.31	24	Lead: (50:40:10) Class C: Silicalite: Enhancer 923 + 10% BWOC Bentonite + 0.05% BWOC SA-1015 + 0.3% BWOC HR-800 + 0.2% BWOC FE-2 + 0.125 lb/sk Pol-E-Flake + 0.5 lb/sk D-Air 5000
	2130	14.5	5.31	1.2	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

If a DV tool is used, 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'	100%
13-3/8" Surface – Two Stage Option	1 st Stage = 300' / 2 nd Stage = 0'	100%
9-5/8" Intermediate	0'	75%
5-1/2" Production Casing	4900'	25%

Devon Energy, Thistle Unit 118H

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
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			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, Thistle Unit 118H

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.

Devon Energy, Thistle Unit 118H

	Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,350'	FW Gel	8.6-8.8	28-34	N/C
1,350'	5,100'	Saturated Brine	10.0-10.2	28-34	N/C
5,100'	17,369'	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
	PEX	

Devon Energy, Thistle Unit 118H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4693 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 118H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.49°

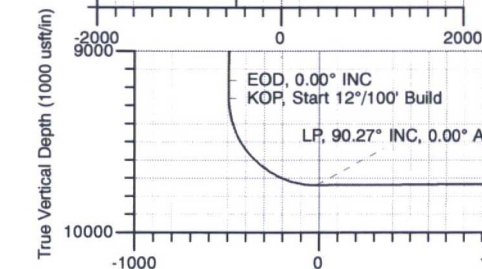
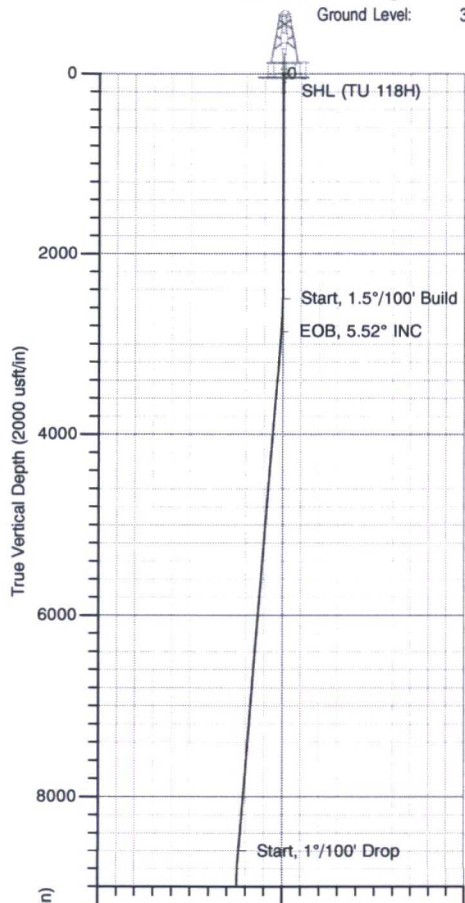
Magnetic Field
Strength: 48214.0snT
Dip Angle: 60.07°
Date: 12/12/2016
Model: HDGM

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

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

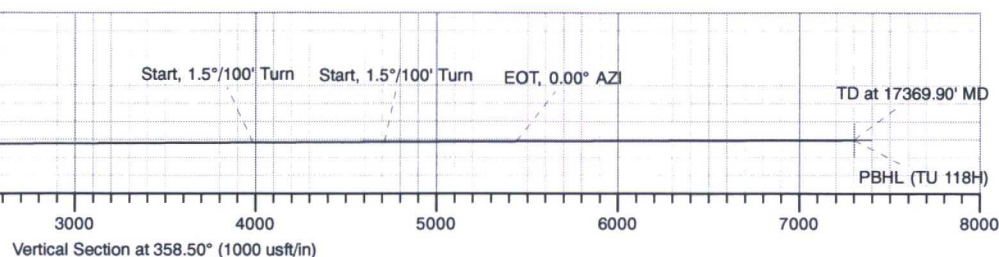
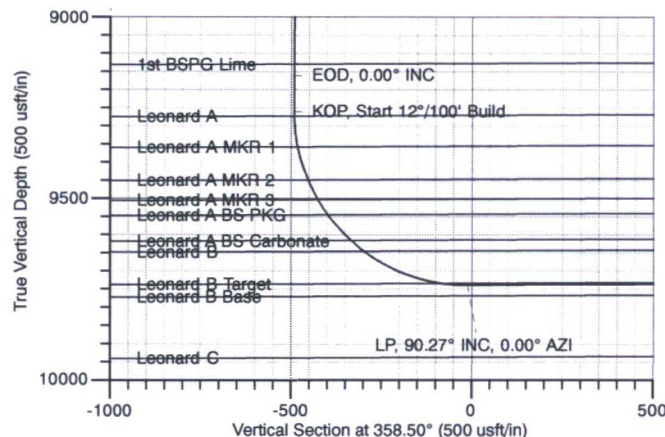


3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Ground Level: 3649.60



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	Start, 1.5°/100' Build
3	2868.26	5.52	213.50	2867.69	-14.79	-9.79	1.50	213.50	-14.53	EOB, 5.52° INC
4	8636.82	5.52	213.50	8609.46	-477.81	-316.31	0.00	0.00	-469.39	Start, 1°/100' Drop
5	9189.21	0.00	0.00	9161.00	-500.00	-331.00	1.00	180.00	-491.19	EOD, 0.00° INC
6	9289.21	0.00	0.00	9261.00	-500.00	-331.00	0.00	0.00	-491.19	KOP, Start 12°/100' Build
7	10041.46	90.27	0.00	9738.46	-20.29	-331.00	12.00	0.00	-11.64	LP, 90.27° INC, 0.00° AZI
8	14041.46	90.27	0.00	9719.61	3979.67	-331.00	0.00	0.00	3986.96	Start, 1.5°/100' Turn
9	14774.79	90.27	11.00	9716.14	4708.49	-260.82	1.50	89.97	4713.70	Start, 1.5°/100' Turn
10	15508.11	90.27	0.00	9712.68	5437.31	-190.65	1.50	-89.97	5440.44	EOT, 0.00° AZI
11	17369.90	90.27	0.00	9703.90	7299.07	-190.65	0.00	0.00	7301.56	TD at 17369.90' MD

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
PBHL (TU 118H)	9703.90	7295.67	-321.00	32° 16' 32.376 N	103° 33' 44.993 W	
SHL (TU 118H)	0.00	0.00	0.00	32° 15' 20.162 N	103° 33' 41.865 W	



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

Plan: Plan #1 (118H/OH)
Thistle Unit
Created By: Brady Deaver
Date: 15/28, December 12 2016
Approved: _____
Date: _____

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 118H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.49°

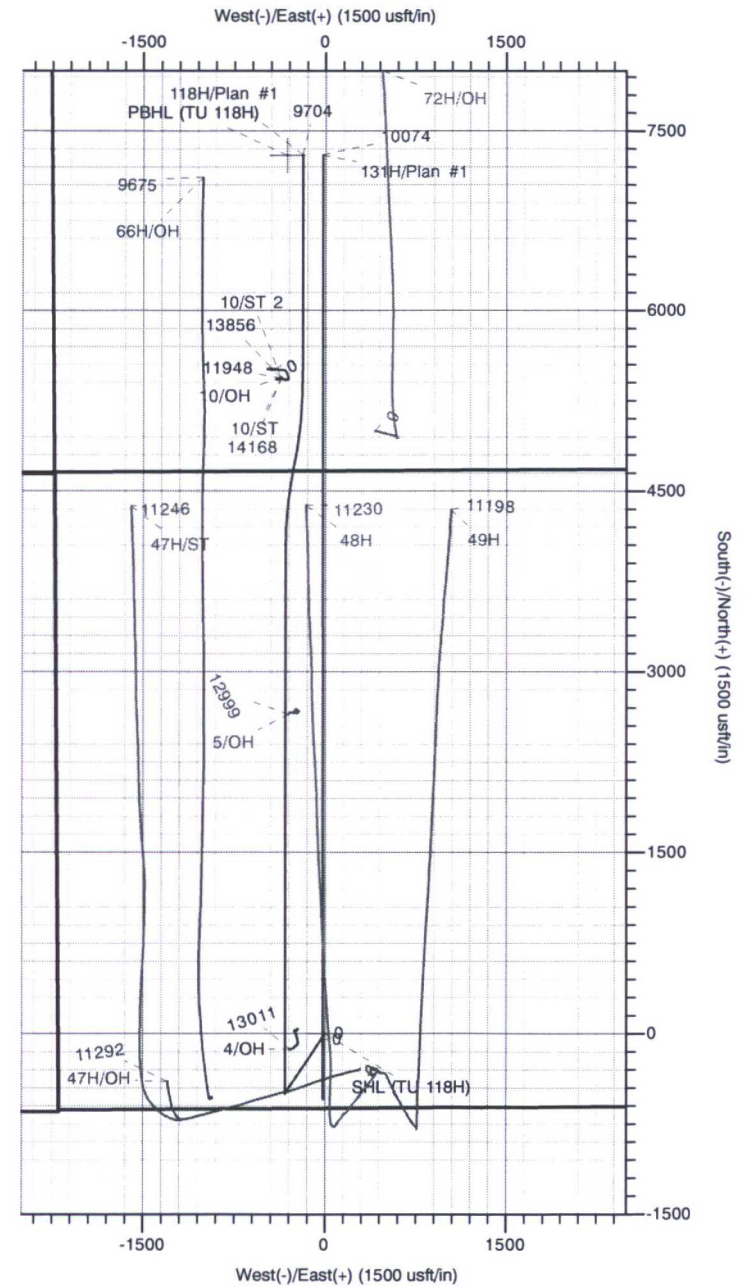
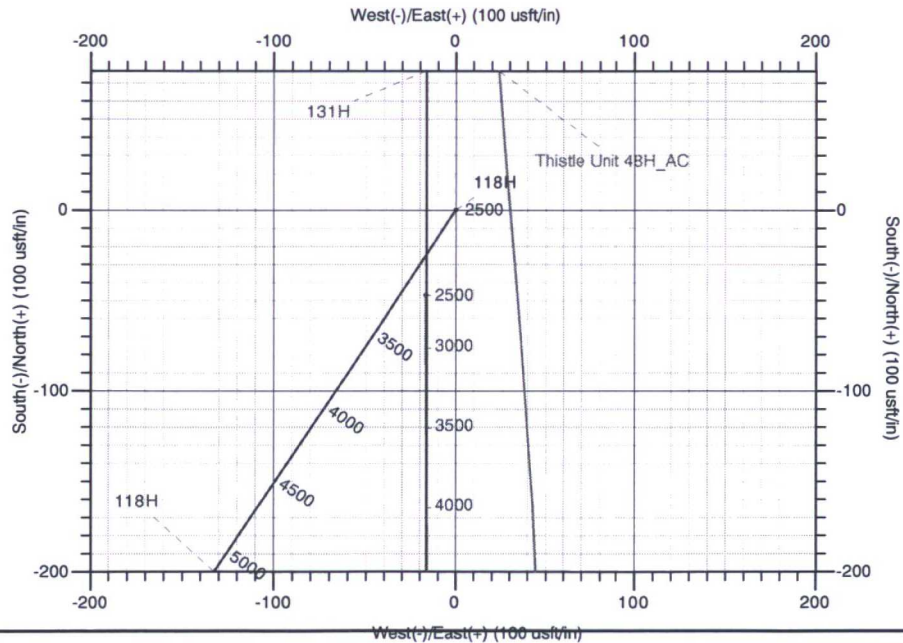
Magnetic Field
Strength: 48214.0snT
Dip Angle: 60.07°
Date: 12/12/2016
Model: HDGM



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

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (TU 118H)	9703.90	7295.67	-321.00	464873.85	779572.68	32° 16' 32.376 N	103° 33' 44.993 W
SHL (TU 118H)	0.00	0.00	0.00	457578.18	779893.68	32° 15' 20.162 N	103° 33' 41.865 W



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

Plan: Plan #1 (118H/OH)
Thistle Unit
Created By: Brady Deaver
Date: 15:30, December 12 2016
Approved: _____
Date: _____

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit

118H

OH

Plan: Plan #1

Standard Planning Report

12 December, 2016

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 118H
Company:	Devon Energy	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	Thistle Unit					
Site Position:		Northing:	468,026.90 usft	Latitude:	32° 17' 3.494	
From:	Map	Easting:	780,722.56 usft	Longitude:	103° 33' 31.335 W	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41

Well	118H					
Well Position	+N/-S	-10,448.72 usft	Northing:	457,578.18 usft	Latitude:	32° 15' 20.162 N
	+E/-W	-828.88 usft	Easting:	779,893.68 usft	Longitude:	103° 33' 41.865 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,673.10 usft	Ground Level:	3,649.60 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/12/2016	6.90	60.07	48,214

Design	Plan #1			
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	358.50

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,868.26	5.52	213.50	2,867.69	-14.79	-9.79	1.50	1.50	0.00	213.50	
8,636.82	5.52	213.50	8,609.46	-477.81	-316.31	0.00	0.00	0.00	0.00	
9,189.21	0.00	0.00	9,161.00	-500.00	-331.00	1.00	-1.00	0.00	180.00	
9,289.21	0.00	0.00	9,261.00	-500.00	-331.00	0.00	0.00	0.00	0.00	
10,041.46	90.27	0.00	9,738.46	-20.29	-331.00	12.00	12.00	0.00	0.00	
14,041.46	90.27	0.00	9,719.61	3,979.67	-331.00	0.00	0.00	0.00	0.00	
14,774.79	90.27	11.00	9,716.14	4,708.49	-260.82	1.50	0.00	1.50	89.97	
15,508.11	90.27	0.00	9,712.68	5,437.31	-190.65	1.50	0.00	-1.50	-89.97	
17,369.90	90.27	0.00	9,703.90	7,299.07	-190.65	0.00	0.00	0.00	0.00	PBHL (TU 118H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 118H
Company:	Devon Energy	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (TU 118H)									
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
1,323.10	0.00	0.00	1,323.10	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,829.10	0.00	0.00	1,829.10	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
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
Start, 1.5°/100' Build									
2,600.00	1.50	213.50	2,599.99	-1.09	-0.72	-1.07	1.50	1.50	0.00
2,700.00	3.00	213.50	2,699.91	-4.36	-2.89	-4.29	1.50	1.50	0.00
2,800.00	4.50	213.50	2,799.69	-9.82	-6.50	-9.65	1.50	1.50	0.00
2,868.26	5.52	213.50	2,867.69	-14.79	-9.79	-14.53	1.50	1.50	0.00
EOB, 5.52° INC									
2,900.00	5.52	213.50	2,899.28	-17.34	-11.48	-17.03	0.00	0.00	0.00
3,000.00	5.52	213.50	2,998.82	-25.37	-16.79	-24.92	0.00	0.00	0.00
3,100.00	5.52	213.50	3,098.35	-33.39	-22.11	-32.80	0.00	0.00	0.00
3,200.00	5.52	213.50	3,197.89	-41.42	-27.42	-40.69	0.00	0.00	0.00
3,300.00	5.52	213.50	3,297.42	-49.45	-32.73	-48.57	0.00	0.00	0.00
3,400.00	5.52	213.50	3,396.96	-57.47	-38.05	-56.46	0.00	0.00	0.00
3,500.00	5.52	213.50	3,496.50	-65.50	-43.36	-64.34	0.00	0.00	0.00
3,600.00	5.52	213.50	3,596.03	-73.53	-48.67	-72.23	0.00	0.00	0.00
3,700.00	5.52	213.50	3,695.57	-81.55	-53.99	-80.11	0.00	0.00	0.00
3,800.00	5.52	213.50	3,795.10	-89.58	-59.30	-88.00	0.00	0.00	0.00
3,900.00	5.52	213.50	3,894.64	-97.61	-64.61	-95.88	0.00	0.00	0.00
4,000.00	5.52	213.50	3,994.17	-105.63	-69.93	-103.77	0.00	0.00	0.00
4,100.00	5.52	213.50	4,093.71	-113.66	-75.24	-111.66	0.00	0.00	0.00
4,200.00	5.52	213.50	4,193.25	-121.69	-80.56	-119.54	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 118H
Company:	Devon Energy	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
4,300.00	5.52	213.50	4,292.78	-129.71	-85.87	-127.43	0.00	0.00	0.00
4,400.00	5.52	213.50	4,392.32	-137.74	-91.18	-135.31	0.00	0.00	0.00
4,500.00	5.52	213.50	4,491.85	-145.77	-96.50	-143.20	0.00	0.00	0.00
4,600.00	5.52	213.50	4,591.39	-153.79	-101.81	-151.08	0.00	0.00	0.00
4,700.00	5.52	213.50	4,690.92	-161.82	-107.12	-158.97	0.00	0.00	0.00
4,800.00	5.52	213.50	4,790.46	-169.85	-112.44	-166.85	0.00	0.00	0.00
4,900.00	5.52	213.50	4,889.99	-177.87	-117.75	-174.74	0.00	0.00	0.00
4,979.34	5.52	213.50	4,968.97	-184.24	-121.97	-180.99	0.00	0.00	0.00
Base of Salt									
5,000.00	5.52	213.50	4,989.53	-185.90	-123.06	-182.62	0.00	0.00	0.00
5,100.00	5.52	213.50	5,089.07	-193.92	-128.38	-190.51	0.00	0.00	0.00
5,200.00	5.52	213.50	5,188.60	-201.95	-133.69	-198.39	0.00	0.00	0.00
5,249.70	5.52	213.50	5,238.07	-205.94	-136.33	-202.31	0.00	0.00	0.00
Delaware									
5,300.00	5.52	213.50	5,288.14	-209.98	-139.01	-206.28	0.00	0.00	0.00
5,400.00	5.52	213.50	5,387.67	-218.00	-144.32	-214.16	0.00	0.00	0.00
5,500.00	5.52	213.50	5,487.21	-226.03	-149.63	-222.05	0.00	0.00	0.00
5,600.00	5.52	213.50	5,586.74	-234.06	-154.95	-229.93	0.00	0.00	0.00
5,700.00	5.52	213.50	5,686.28	-242.08	-160.26	-237.82	0.00	0.00	0.00
5,800.00	5.52	213.50	5,785.82	-250.11	-165.57	-245.70	0.00	0.00	0.00
5,900.00	5.52	213.50	5,885.35	-258.14	-170.89	-253.59	0.00	0.00	0.00
6,000.00	5.52	213.50	5,984.89	-266.16	-176.20	-261.47	0.00	0.00	0.00
6,100.00	5.52	213.50	6,084.42	-274.19	-181.51	-269.36	0.00	0.00	0.00
6,200.00	5.52	213.50	6,183.96	-282.22	-186.83	-277.24	0.00	0.00	0.00
6,300.00	5.52	213.50	6,283.49	-290.24	-192.14	-285.13	0.00	0.00	0.00
6,400.00	5.52	213.50	6,383.03	-298.27	-197.46	-293.01	0.00	0.00	0.00
6,500.00	5.52	213.50	6,482.56	-306.30	-202.77	-300.90	0.00	0.00	0.00
6,600.00	5.52	213.50	6,582.10	-314.32	-208.08	-308.78	0.00	0.00	0.00
6,700.00	5.52	213.50	6,681.64	-322.35	-213.40	-316.67	0.00	0.00	0.00
6,800.00	5.52	213.50	6,781.17	-330.38	-218.71	-324.55	0.00	0.00	0.00
6,900.00	5.52	213.50	6,880.71	-338.40	-224.02	-332.44	0.00	0.00	0.00
7,000.00	5.52	213.50	6,980.24	-346.43	-229.34	-340.33	0.00	0.00	0.00
7,100.00	5.52	213.50	7,079.78	-354.46	-234.65	-348.21	0.00	0.00	0.00
7,200.00	5.52	213.50	7,179.31	-362.48	-239.96	-356.10	0.00	0.00	0.00
7,300.00	5.52	213.50	7,278.85	-370.51	-245.28	-363.98	0.00	0.00	0.00
7,400.00	5.52	213.50	7,378.39	-378.54	-250.59	-371.87	0.00	0.00	0.00
7,500.00	5.52	213.50	7,477.92	-386.56	-255.91	-379.75	0.00	0.00	0.00
7,600.00	5.52	213.50	7,577.46	-394.59	-261.22	-387.64	0.00	0.00	0.00
7,700.00	5.52	213.50	7,676.99	-402.62	-266.53	-395.52	0.00	0.00	0.00
7,800.00	5.52	213.50	7,776.53	-410.64	-271.85	-403.41	0.00	0.00	0.00
7,900.00	5.52	213.50	7,876.06	-418.67	-277.16	-411.29	0.00	0.00	0.00
8,000.00	5.52	213.50	7,975.60	-426.70	-282.47	-419.18	0.00	0.00	0.00
8,100.00	5.52	213.50	8,075.13	-434.72	-287.79	-427.06	0.00	0.00	0.00
8,200.00	5.52	213.50	8,174.67	-442.75	-293.10	-434.95	0.00	0.00	0.00
8,300.00	5.52	213.50	8,274.21	-450.78	-298.41	-442.83	0.00	0.00	0.00
8,400.00	5.52	213.50	8,373.74	-458.80	-303.73	-450.72	0.00	0.00	0.00
8,500.00	5.52	213.50	8,473.28	-466.83	-309.04	-458.60	0.00	0.00	0.00
8,600.00	5.52	213.50	8,572.81	-474.86	-314.36	-466.49	0.00	0.00	0.00
8,636.82	5.52	213.50	8,609.46	-477.81	-316.31	-469.39	0.00	0.00	0.00
Start, 1°/100' Drop									
8,700.00	4.89	213.50	8,672.38	-482.60	-319.48	-474.09	1.00	-1.00	0.00
8,800.00	3.89	213.50	8,772.09	-488.98	-323.71	-480.36	1.00	-1.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 118H
Company:	Devon Energy	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
8,900.00	2.89	213.50	8,871.91	-493.91	-326.97	-485.21	1.00	-1.00	0.00
9,000.00	1.89	213.50	8,971.82	-497.40	-329.28	-488.63	1.00	-1.00	0.00
9,002.63	1.87	213.50	8,974.44	-497.47	-329.32	-488.70	1.00	-1.00	0.00
Lower Brushy									
9,100.00	0.89	213.50	9,071.79	-499.42	-330.62	-490.62	1.00	-1.00	0.00
9,158.67	0.31	213.50	9,130.46	-499.93	-330.96	-491.12	1.00	-1.00	0.00
1st BSPG Lime									
9,189.21	0.00	0.00	9,161.00	-500.00	-331.00	-491.19	1.00	-1.00	479.62
EOD, 0.00° INC									
9,200.00	0.00	0.00	9,171.79	-500.00	-331.00	-491.19	0.00	0.00	0.00
9,289.21	0.00	0.00	9,261.00	-500.00	-331.00	-491.19	0.00	0.00	0.00
KOP, Start 12°/100' Build									
9,300.00	1.29	0.00	9,271.79	-499.88	-331.00	-491.07	12.00	12.00	0.00
9,301.67	1.49	0.00	9,273.46	-499.84	-331.00	-491.02	12.00	12.00	0.00
Leonard A									
9,325.00	4.29	0.00	9,296.75	-498.66	-331.00	-489.85	12.00	12.00	0.00
9,350.00	7.29	0.00	9,321.62	-496.14	-331.00	-487.32	12.00	12.00	0.00
9,375.00	10.29	0.00	9,346.33	-492.31	-331.00	-483.50	12.00	12.00	0.00
9,387.31	11.77	0.00	9,358.41	-489.96	-331.00	-481.15	12.00	12.00	0.00
Leonard A MKR 1									
9,400.00	13.29	0.00	9,370.79	-487.20	-331.00	-478.40	12.00	12.00	0.00
9,425.00	16.29	0.00	9,394.96	-480.82	-331.00	-472.02	12.00	12.00	0.00
9,450.00	19.29	0.00	9,418.76	-473.18	-331.00	-464.38	12.00	12.00	0.00
9,475.00	22.29	0.00	9,442.13	-464.31	-331.00	-455.51	12.00	12.00	0.00
9,482.74	23.22	0.00	9,449.27	-461.31	-331.00	-452.51	12.00	12.00	0.00
Leonard A MKR 2									
9,500.00	25.29	0.00	9,465.01	-454.22	-331.00	-445.43	12.00	12.00	0.00
9,525.00	28.29	0.00	9,487.32	-442.95	-331.00	-434.16	12.00	12.00	0.00
9,544.32	30.61	0.00	9,504.14	-433.45	-331.00	-424.66	12.00	12.00	0.00
Leonard A MKR 3									
9,550.00	31.29	0.00	9,509.01	-430.53	-331.00	-421.74	12.00	12.00	0.00
9,575.00	34.29	0.00	9,530.02	-416.99	-331.00	-408.21	12.00	12.00	0.00
9,594.63	36.65	0.00	9,546.01	-405.60	-331.00	-396.82	12.00	12.00	0.00
Leonard A BS PKG									
9,600.00	37.29	0.00	9,550.30	-402.37	-331.00	-393.59	12.00	12.00	0.00
9,625.00	40.29	0.00	9,569.78	-386.71	-331.00	-377.94	12.00	12.00	0.00
9,650.00	43.29	0.00	9,588.42	-370.05	-331.00	-361.28	12.00	12.00	0.00
9,675.00	46.29	0.00	9,606.16	-352.44	-331.00	-343.68	12.00	12.00	0.00
9,690.53	48.16	0.00	9,616.71	-341.04	-331.00	-332.28	12.00	12.00	0.00
Leonard A BS Carbonate									
9,700.00	49.29	0.00	9,622.95	-333.93	-331.00	-325.17	12.00	12.00	0.00
9,725.00	52.29	0.00	9,638.75	-314.56	-331.00	-305.81	12.00	12.00	0.00
9,737.95	53.85	0.00	9,646.53	-304.20	-331.00	-295.46	12.00	12.00	0.00
Leonard B									
9,750.00	55.29	0.00	9,653.52	-294.39	-331.00	-285.64	12.00	12.00	0.00
9,775.00	58.29	0.00	9,667.21	-273.47	-331.00	-264.73	12.00	12.00	0.00
9,800.00	61.29	0.00	9,679.78	-251.87	-331.00	-243.14	12.00	12.00	0.00
9,825.00	64.29	0.00	9,691.21	-229.63	-331.00	-220.91	12.00	12.00	0.00
9,850.00	67.29	0.00	9,701.46	-206.84	-331.00	-198.12	12.00	12.00	0.00
9,875.00	70.29	0.00	9,710.50	-183.53	-331.00	-174.83	12.00	12.00	0.00
9,900.00	73.29	0.00	9,718.31	-159.79	-331.00	-151.09	12.00	12.00	0.00

LEAM Drilling Systems LLC

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Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
9,925.00	76.29	0.00	9,724.87	-135.66	-331.00	-126.97	12.00	12.00	0.00
9,950.00	79.29	0.00	9,730.15	-111.23	-331.00	-102.55	12.00	12.00	0.00
9,975.00	82.29	0.00	9,734.15	-86.56	-331.00	-77.88	12.00	12.00	0.00
9,977.61	82.61	0.00	9,734.50	-83.97	-331.00	-75.30	12.00	12.00	0.00
Leonard B Target									
10,000.00	85.29	0.00	9,736.86	-61.71	-331.00	-53.04	12.00	12.00	0.00
10,025.00	88.29	0.00	9,738.25	-36.75	-331.00	-28.09	12.00	12.00	0.00
10,041.46	90.27	0.00	9,738.46	-20.29	-331.00	-11.64	12.00	12.00	0.00
LP, 90.27° INC, 0.00° AZI									
10,100.00	90.27	0.00	9,738.18	38.25	-331.00	46.88	0.00	0.00	0.00
10,200.00	90.27	0.00	9,737.71	138.25	-331.00	146.84	0.00	0.00	0.00
10,300.00	90.27	0.00	9,737.24	238.25	-331.00	246.81	0.00	0.00	0.00
10,400.00	90.27	0.00	9,736.77	338.25	-331.00	346.77	0.00	0.00	0.00
10,500.00	90.27	0.00	9,736.30	438.25	-331.00	446.74	0.00	0.00	0.00
10,600.00	90.27	0.00	9,735.83	538.24	-331.00	546.70	0.00	0.00	0.00
10,700.00	90.27	0.00	9,735.36	638.24	-331.00	646.67	0.00	0.00	0.00
10,800.00	90.27	0.00	9,734.89	738.24	-331.00	746.63	0.00	0.00	0.00
10,900.00	90.27	0.00	9,734.41	838.24	-331.00	846.60	0.00	0.00	0.00
11,000.00	90.27	0.00	9,733.94	938.24	-331.00	946.56	0.00	0.00	0.00
11,100.00	90.27	0.00	9,733.47	1,038.24	-331.00	1,046.53	0.00	0.00	0.00
11,200.00	90.27	0.00	9,733.00	1,138.24	-331.00	1,146.49	0.00	0.00	0.00
11,300.00	90.27	0.00	9,732.53	1,238.24	-331.00	1,246.46	0.00	0.00	0.00
11,400.00	90.27	0.00	9,732.06	1,338.24	-331.00	1,346.42	0.00	0.00	0.00
11,500.00	90.27	0.00	9,731.59	1,438.23	-331.00	1,446.39	0.00	0.00	0.00
11,600.00	90.27	0.00	9,731.12	1,538.23	-331.00	1,546.35	0.00	0.00	0.00
11,700.00	90.27	0.00	9,730.64	1,638.23	-331.00	1,646.32	0.00	0.00	0.00
11,800.00	90.27	0.00	9,730.17	1,738.23	-331.00	1,746.28	0.00	0.00	0.00
11,900.00	90.27	0.00	9,729.70	1,838.23	-331.00	1,846.25	0.00	0.00	0.00
12,000.00	90.27	0.00	9,729.23	1,938.23	-331.00	1,946.21	0.00	0.00	0.00
12,100.00	90.27	0.00	9,728.76	2,038.23	-331.00	2,046.18	0.00	0.00	0.00
12,200.00	90.27	0.00	9,728.29	2,138.23	-331.00	2,146.14	0.00	0.00	0.00
12,300.00	90.27	0.00	9,727.82	2,238.23	-331.00	2,246.11	0.00	0.00	0.00
12,400.00	90.27	0.00	9,727.35	2,338.22	-331.00	2,346.07	0.00	0.00	0.00
12,500.00	90.27	0.00	9,726.87	2,438.22	-331.00	2,446.03	0.00	0.00	0.00
12,600.00	90.27	0.00	9,726.40	2,538.22	-331.00	2,546.00	0.00	0.00	0.00
12,700.00	90.27	0.00	9,725.93	2,638.22	-331.00	2,645.96	0.00	0.00	0.00
12,800.00	90.27	0.00	9,725.46	2,738.22	-331.00	2,745.93	0.00	0.00	0.00
12,900.00	90.27	0.00	9,724.99	2,838.22	-331.00	2,845.89	0.00	0.00	0.00
13,000.00	90.27	0.00	9,724.52	2,938.22	-331.00	2,945.86	0.00	0.00	0.00
13,100.00	90.27	0.00	9,724.05	3,038.22	-331.00	3,045.82	0.00	0.00	0.00
13,200.00	90.27	0.00	9,723.58	3,138.22	-331.00	3,145.79	0.00	0.00	0.00
13,300.00	90.27	0.00	9,723.10	3,238.21	-331.00	3,245.75	0.00	0.00	0.00
13,400.00	90.27	0.00	9,722.63	3,338.21	-331.00	3,345.72	0.00	0.00	0.00
13,500.00	90.27	0.00	9,722.16	3,438.21	-331.00	3,445.68	0.00	0.00	0.00
13,600.00	90.27	0.00	9,721.69	3,538.21	-331.00	3,545.65	0.00	0.00	0.00
13,700.00	90.27	0.00	9,721.22	3,638.21	-331.00	3,645.61	0.00	0.00	0.00
13,800.00	90.27	0.00	9,720.75	3,738.21	-331.00	3,745.58	0.00	0.00	0.00
13,900.00	90.27	0.00	9,720.28	3,838.21	-331.00	3,845.54	0.00	0.00	0.00
14,000.00	90.27	0.00	9,719.81	3,938.21	-331.00	3,945.51	0.00	0.00	0.00
14,041.46	90.27	0.00	9,719.61	3,979.67	-331.00	3,986.96	0.00	0.00	0.00
Start, 1.5°/100' Turn									

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 118H
Company:	Devon Energy	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
14,100.00	90.27	0.88	9,719.33	4,038.20	-330.55	4,045.46	1.50	0.00	1.50
14,200.00	90.27	2.38	9,718.86	4,138.16	-327.71	4,145.30	1.50	0.00	1.50
14,300.00	90.27	3.88	9,718.39	4,238.01	-322.25	4,244.98	1.50	0.00	1.50
14,400.00	90.27	5.38	9,717.92	4,337.68	-314.19	4,344.40	1.50	0.00	1.50
14,500.00	90.27	6.88	9,717.44	4,437.10	-303.51	4,443.51	1.50	0.00	1.50
14,600.00	90.27	8.38	9,716.97	4,536.21	-290.24	4,542.24	1.50	0.00	1.50
14,700.00	90.27	9.88	9,716.50	4,634.94	-274.37	4,640.53	1.50	0.00	1.50
14,774.79	90.27	11.00	9,716.14	4,708.49	-260.82	4,713.70	1.50	0.00	1.50
Start, 1.5°/100' Turn									
14,800.00	90.27	10.62	9,716.03	4,733.25	-256.09	4,738.33	1.50	0.00	-1.50
14,900.00	90.27	9.12	9,715.55	4,831.77	-238.95	4,836.36	1.50	0.00	-1.50
15,000.00	90.27	7.62	9,715.08	4,930.70	-224.39	4,934.88	1.50	0.00	-1.50
15,100.00	90.27	6.12	9,714.61	5,029.98	-212.43	5,033.81	1.50	0.00	-1.50
15,200.00	90.27	4.62	9,714.13	5,129.53	-203.07	5,133.09	1.50	0.00	-1.50
15,300.00	90.27	3.12	9,713.66	5,229.30	-196.31	5,232.65	1.50	0.00	-1.50
15,400.00	90.27	1.62	9,713.19	5,329.21	-192.18	5,332.41	1.50	0.00	-1.50
15,508.11	90.27	0.00	9,712.68	5,437.31	-190.65	5,440.44	1.50	0.00	-1.50
EOT, 0.00° AZI									
15,600.00	90.27	0.00	9,712.24	5,529.20	-190.65	5,532.29	0.00	0.00	0.00
15,700.00	90.27	0.00	9,711.77	5,629.19	-190.65	5,632.25	0.00	0.00	0.00
15,800.00	90.27	0.00	9,711.30	5,729.19	-190.65	5,732.22	0.00	0.00	0.00
15,900.00	90.27	0.00	9,710.83	5,829.19	-190.65	5,832.18	0.00	0.00	0.00
16,000.00	90.27	0.00	9,710.36	5,929.19	-190.65	5,932.15	0.00	0.00	0.00
16,100.00	90.27	0.00	9,709.89	6,029.19	-190.65	6,032.11	0.00	0.00	0.00
16,200.00	90.27	0.00	9,709.42	6,129.19	-190.65	6,132.08	0.00	0.00	0.00
16,300.00	90.27	0.00	9,708.95	6,229.19	-190.65	6,232.04	0.00	0.00	0.00
16,400.00	90.27	0.00	9,708.47	6,329.19	-190.65	6,332.01	0.00	0.00	0.00
16,500.00	90.27	0.00	9,708.00	6,429.19	-190.65	6,431.97	0.00	0.00	0.00
16,600.00	90.27	0.00	9,707.53	6,529.18	-190.65	6,531.94	0.00	0.00	0.00
16,700.00	90.27	0.00	9,707.06	6,629.18	-190.65	6,631.90	0.00	0.00	0.00
16,800.00	90.27	0.00	9,706.59	6,729.18	-190.65	6,731.87	0.00	0.00	0.00
16,900.00	90.27	0.00	9,706.12	6,829.18	-190.65	6,831.83	0.00	0.00	0.00
17,000.00	90.27	0.00	9,705.65	6,929.18	-190.65	6,931.80	0.00	0.00	0.00
17,100.00	90.27	0.00	9,705.18	7,029.18	-190.65	7,031.76	0.00	0.00	0.00
17,200.00	90.27	0.00	9,704.70	7,129.18	-190.65	7,131.73	0.00	0.00	0.00
17,300.00	90.27	0.00	9,704.23	7,229.18	-190.65	7,231.69	0.00	0.00	0.00
17,366.49	90.27	0.00	9,703.92	7,295.67	-190.65	7,298.16	0.00	0.00	0.00
PBHL (TU 118H)									
17,369.90	90.27	0.00	9,703.90	7,299.07	-190.65	7,301.56	0.00	0.00	0.00
TD at 17369.90' MD									

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 118H
Company:	Devon Energy	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	118H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (TU 118H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	457,578.18	779,893.68	32° 15' 20.162 N	103° 33' 41.865 W
PBHL (TU 118H) - plan misses target center by 130.35usft at 17366.49usft MD (9703.92 TVD, 7295.67 N, -190.65 E) - Point	0.00	0.00	9,703.90	7,295.67	-321.00	464,873.85	779,572.68	32° 16' 32.376 N	103° 33' 44.993 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,323.10	1,323.10	Rustler		-0.27	0.00
1,829.10	1,829.10	Top of Salt		-0.27	0.00
4,979.34	4,968.97	Base of Salt		-0.27	0.00
5,249.70	5,238.07	Delaware		-0.27	0.00
9,002.63	8,974.44	Lower Brushy		-0.27	0.00
9,158.67	9,130.46	1st BSPG Lime		-0.27	0.00
9,301.67	9,273.46	Leonard A		-0.27	0.00
9,387.31	9,358.41	Leonard A MKR 1		-0.27	0.00
9,482.74	9,449.27	Leonard A MKR 2		-0.27	0.00
9,544.32	9,504.14	Leonard A MKR 3		-0.27	0.00
9,594.63	9,546.01	Leonard A BS PKG		-0.27	0.00
9,690.53	9,616.71	Leonard A BS Carbonate		-0.27	0.00
9,737.95	9,646.53	Leonard B		-0.27	0.00
9,977.61	9,734.50	Leonard B Target		-0.27	0.00

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,500.00	2,500.00	0.00	0.00	Start, 1.5°/100' Build
2,868.26	2,867.69	-14.79	-9.79	EOB, 5.52° INC
8,636.82	8,609.46	-477.81	-316.31	Start, 1°/100' Drop
9,189.21	9,161.00	-500.00	-331.00	EOD, 0.00° INC
9,289.21	9,261.00	-500.00	-331.00	KOP, Start 12°/100' Build
10,041.46	9,738.46	-20.29	-331.00	LP, 90.27° INC, 0.00° AZI
14,041.46	9,719.61	3,979.67	-331.00	Start, 1.5°/100' Turn
14,774.79	9,716.14	4,708.49	-260.82	Start, 1.5°/100' Turn
15,508.11	9,712.68	5,437.31	-190.65	EOT, 0.00° AZI
17,369.90	9,703.90	7,299.07	-190.65	TD at 17369.90' MD