

NM OIL CONSERVATION

ARTESIA DISTRICT

AUG 27 2014

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
8115 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ APT Number 30-015-42611	² Pool Code 96437	³ Pool Name Happy Valley, Bone Spring
⁴ Property Code 40253	⁵ Property Name BOSS HOGG 15 STATE COM	⁶ Well Number 2H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3318.0

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	15	23 S	26 E		175	NORTH	1980	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	15	23 S	26 E		330	SOUTH	1980	WEST	EDDY

¹² Dedicated Acres 160.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
---	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

Project Area

Lease Line

Completion Interval

Surface Location

Bottom of Hole

Project Area

Lease Line

Completion Interval

Surface Location

Bottom of Hole

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief; and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

Signature: *Linda Good* Date: 8/25/2014

Printed Name: Linda Good

E-mail Address: linda.good@dvn.com

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: OCTOBER 27, 2013

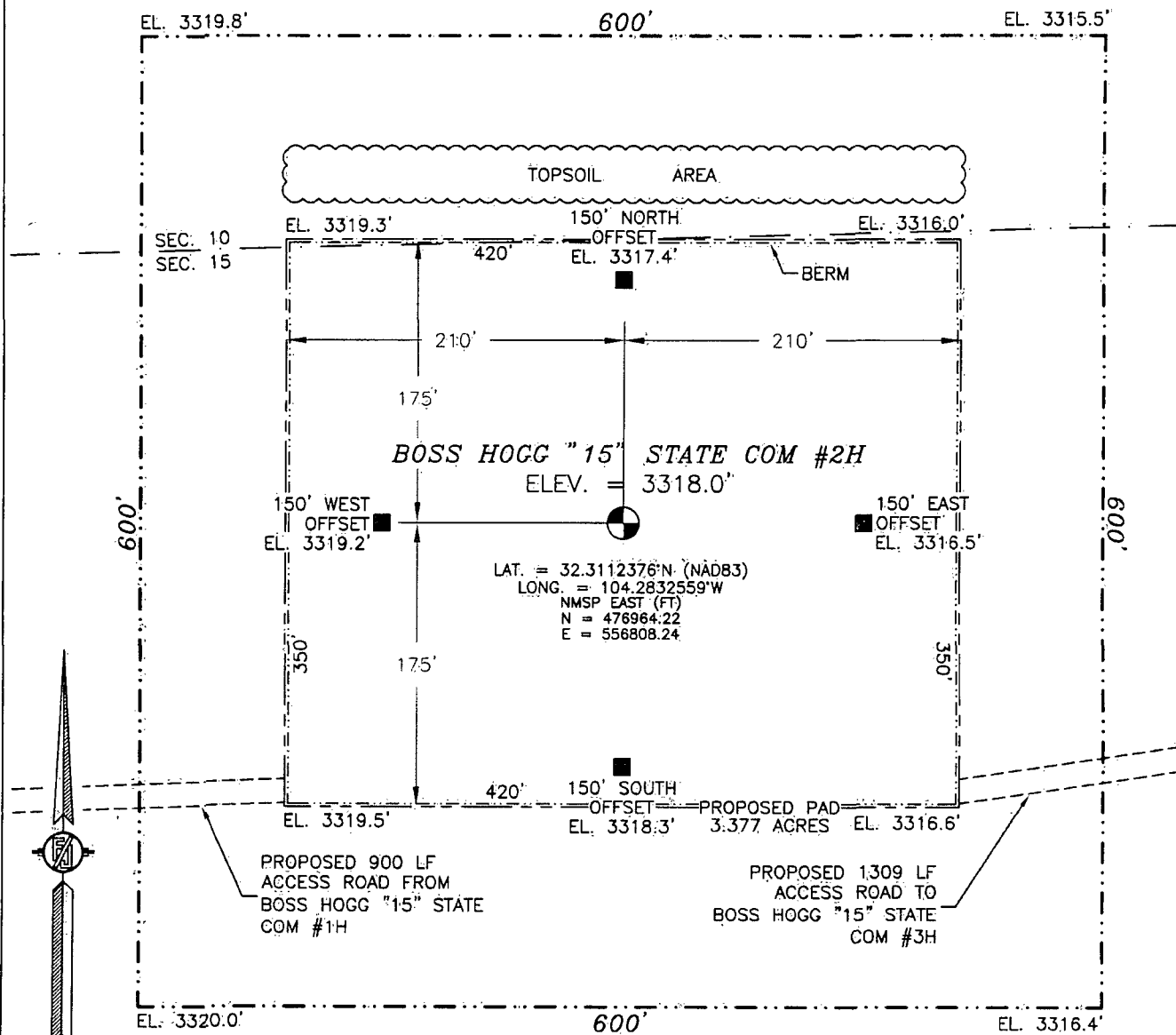
Signature and Seal of Professional Surveyor: *[Signature]*

Certificate Number: 12797

SURVEY NO. 2416

SECTION 15, TOWNSHIP 23 SOUTH, RANGE 26 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



0 10 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM MILE MARKER 28 ON NATIONAL PARKS HIGHWAY GO SOUTH APPROX. 0.9 MILES TO LEASE ROAD ON RIGHT (WEST) TURN WEST GO APPROX. 0.9 MILES, PASS CALICHE PIT ON RIGHT (NORTH) TO A ROAD LATH ON RIGHT (NORTH) OF LEASE ROAD WITH RED AND WHITE FLAGGING. FOLLOW ROAD LATHS GOING NORTH APPROX. 0.31 MILES TO BOSS HOGG "15" STATE COM #1H, CENTERLINE PROPOSED ROAD LATHS CONTINUES GOING EAST APPROX. 0.2 MILES TO BOSS HOGG "15" STATE COM #2H.

DEVON ENERGY PRODUCTION COMPANY, L.P.
BOSS HOGG "15" STATE COM #2H
LOCATED 175 FT. FROM THE NORTH LINE
AND 1980 FT. FROM THE WEST LINE OF
SECTION 15, TOWNSHIP 23 SOUTH,
RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 27, 2013

SURVEY NO. 2416

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

[illegible]

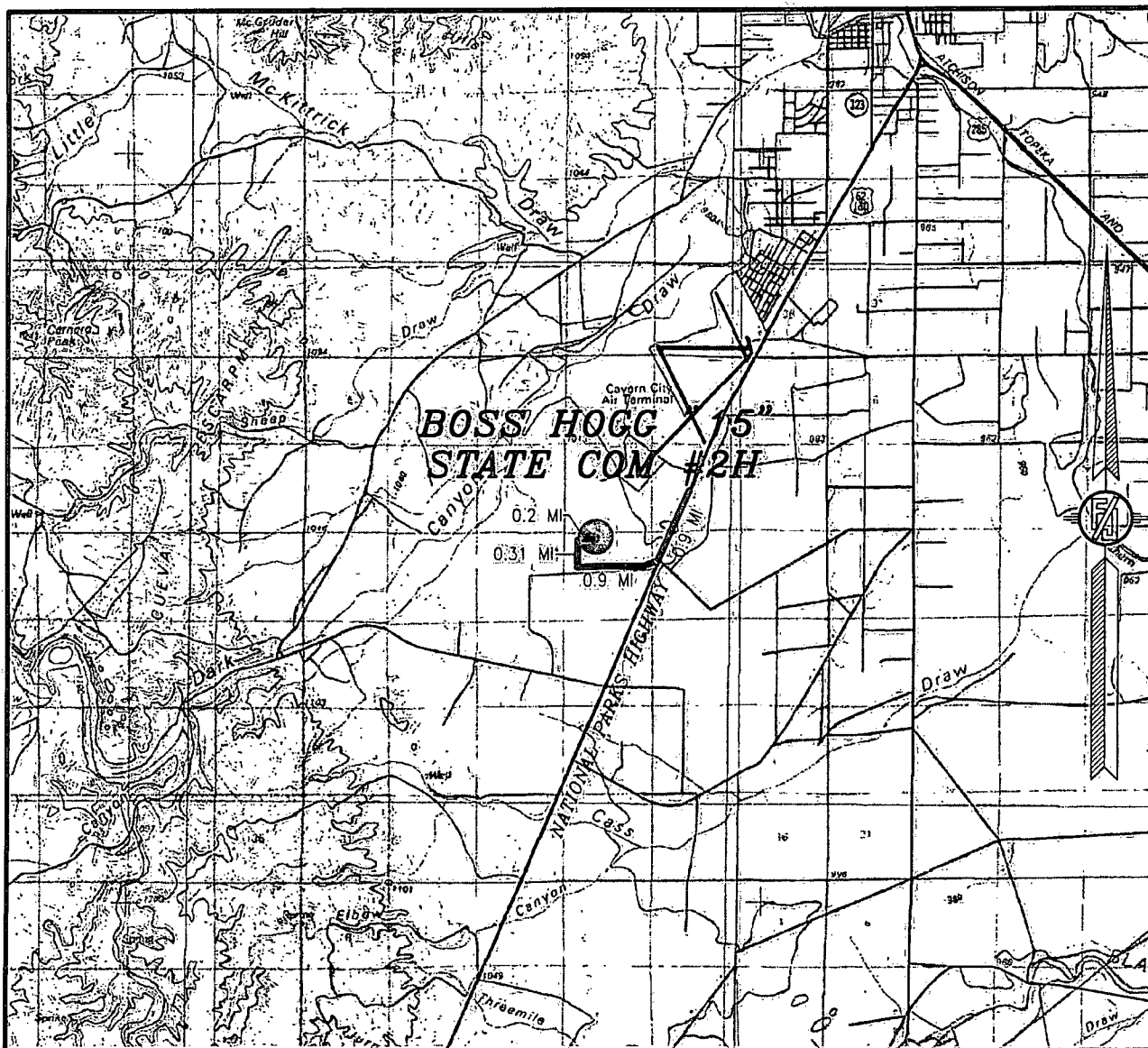
NOT TO SCALE

OCTOBER 27, 2013

SURVEY NO. 2416

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

SECTION 15, TOWNSHIP 23 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

BOSS HOGG "15" STATE COM #2H

LOCATED 175 FT. FROM THE NORTH LINE
AND 1980 FT. FROM THE WEST LINE OF
SECTION 15, TOWNSHIP 23 SOUTH,
RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 27, 2013

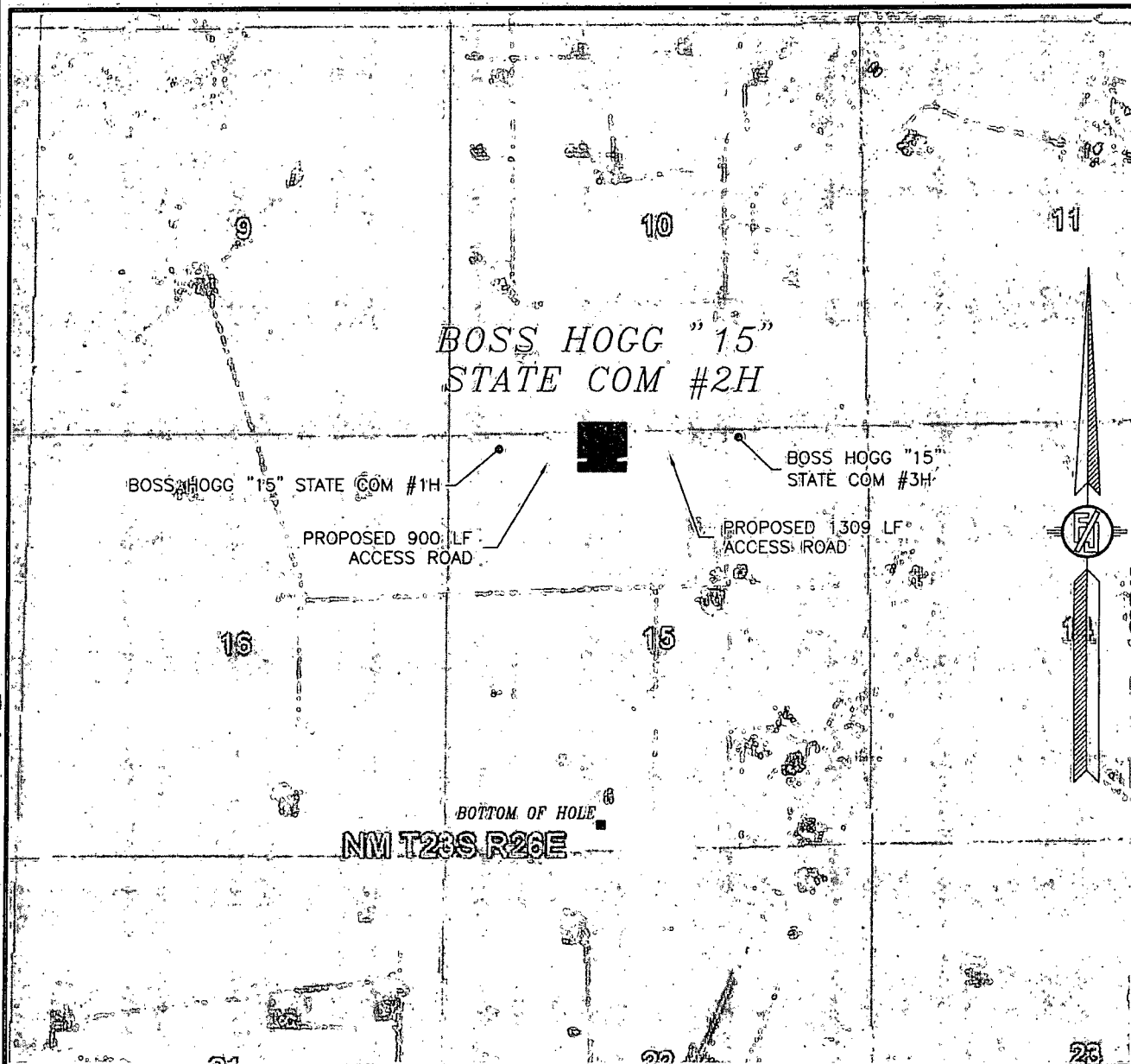
DIRECTIONS TO LOCATION.

FROM MILE MARKER 28 ON NATIONAL PARKS HIGHWAY GO SOUTH
APPROX. 0.9 MILES TO LEASE ROAD ON RIGHT (WEST) TURN WEST
GO APPROX. 0.9 MILES, PASS CALICHE PIT ON RIGHT (NORTH) TO A
ROAD LATH ON RIGHT (NORTH) OF LEASE ROAD WITH RED AND WHITE
FLAGGING. FOLLOW ROAD LATHS GOING NORTH APPROX. 0.31 MILES
TO BOSS HOGG "15" STATE COM #1H. CENTERLINE PROPOSED ROAD
LATHS CONTINUES GOING EAST APPROX. 0.2 MILES TO BOSS HOGG
"15" STATE COM #2H.

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

SURVEY NO. 2416
CARLSBAD, NEW MEXICO

SECTION 15, TOWNSHIP 23 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
APRIL 2013

DEVON ENERGY PRODUCTION COMPANY, L.P.

BOSS HOGG "15" STATE COM #2H
LOCATED 175 FT. FROM THE NORTH LINE
AND 1980 FT. FROM THE WEST LINE OF
SECTION 15, TOWNSHIP 23 SOUTH,
RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 27, 2013

SURVEY NO. 2416

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

DRILLING PROGRAM

Devon Energy Production Company, L.P. Boss Hogg 15 State 2H

- 1. Geologic Name of Surface Formation: Quaternary**
- 2. Estimated Tops of Geological Markers & Depths of Anticipated FW, Oil, or Gas:**

a. Fresh Water	400'	
b. Rustler	1290'	Barren
c. Top of Salt	1770'	Barren
d. Base of Salt	5090'	Barren
e. Delaware	5190'	Oil / Gas
f. Cherry Canyon	6060'	Oil / Gas
g. Brushy Canyon	7640'	Oil / Gas
h. Bone Spring Lime	9070'	Oil / Gas
i. 1 st Bone Spring SS	10065'	Oil / Gas
j. 2 nd Bone Spring SS	10771'	Oil / Gas
Total Depth	6694' TVD	11308' MD

3. Pressure Control Equipment:

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be tested per BLM Onshore Oil and Gas Order 2.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be tested per BLM Onshore Oil and Gas Order 2.

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 requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); **if an H&P rig drills this well. Otherwise no flex line is needed.** The line will be kept as straight as possible with minimal turns.

Auxiliary Well Control and Monitoring Equipment:

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

4. Casing Program:

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2"	0 - 675'	13-3/8"	0 - 675'	48	STC	H-40	2.55	5.73	16.70
12-1/4"	675-1950'	9-5/8"	0-1950'	36	LTC	J-55	1.99	3.47	6.45
8-3/4"	1950-11308'	5-1/2"	0-11308'	17	BTC	P-110	2.65	3.29	4.94

Casing Notes:

- All casing is new and API approved

Maximum Lateral TVD: 6768'

5. Proposed mud Circulations System:

Depth	Mud Weight	Viscosity	Fluid Loss	Type System
0-675'	8.4-9.0	30-34	N/C	FW
675-1950'	10.0	28-32	N/C	Brine
1950-11308'	8.6-9.0	28-32	N/C	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface	430	13.5	8.92	1.72	Lead	Class C Cement + 4% BWOC Bentonite + 2% BWOC CaCl ₂
	80	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
9-5/8" Intermediate Single Stage	560	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	300	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
9-5/8" Intermediate 2-Stage 17 Option	310	13.7	8.66	1.67	Tail	Class C Cement + 0.4% BWOC LAP-1 + 0.2% BWOC HR-601 + 0.2 lb/sk D-Air 5000 + 4% BWOC Bentonite + 69.3% Fresh Water
	DV Tool at 1000ft					
	110	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	190	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
5-1/2" Production Casing Single Stage	750	11.9	12.89	2.26	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 + 76.4% Fresh Water
	260	12.5	10.86	1.96	Lead	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	780	14.5	5.38	1.22	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
5-1/2" Production Casing 2-Stage Option	290	12.5	10.86	1.96	Lead	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	1370	14.5	5.38	1.22	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
	DV Tool at 4500ft					
	360	11.9	12.89	2.26	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 + 76.4% Fresh Water
	120	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water

TOC for all Strings:

Surface	@	0'
Intermediate	@	0'
Production	@	1450'

Notes:

- Cement volumes Surface 100%, Intermediate 50%, Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and/or caliper log data
- If lost circulation is encountered while drilling the production and/or the intermediate wellbores, a DV tool will be installed a minimum of 50' below the previous casing shoe and of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately.

7. Logging, Coring, and Testing Program:

- a. Drill stem tests will be based on geological sample shows.
- b. If a drill stem test is anticipated, a procedure, equipment to be used, and safety measures will be provided via sundry notice to the BLM.
- c. Resistivity and porosity logs are planned below the intermediate casing point. Stated logs run will be named in the Completion Report and submitted to the BLM.
- d. No coring program is planned
- e. Additional Testing will be initiated subsequent to setting the production casing. Specific intervals will be targeted based on log evaluation, geological sample shows, and drill stem tests.

8. Potential Hazards:

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area, and none is anticipated to be encountered. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation being used to drill this well. Estimated BHP: 3046 psi, and estimated BHT: 116 degrees.
- b. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production string is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached.

9. Anticipated Starting Date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 20 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
Site: Boss Hogg 15 State Com
Well: 2H
Wellbore: OH
Design: Plan #1 Draft 1



Azimuths to Grid North
True North: -0.03°
Magnetic North: 7.68°

Magnetic Field
Strength: 48294.2snT
Dip Angle: 60.06°
Date: 02/20/2014
Model: BGGM2013

devon

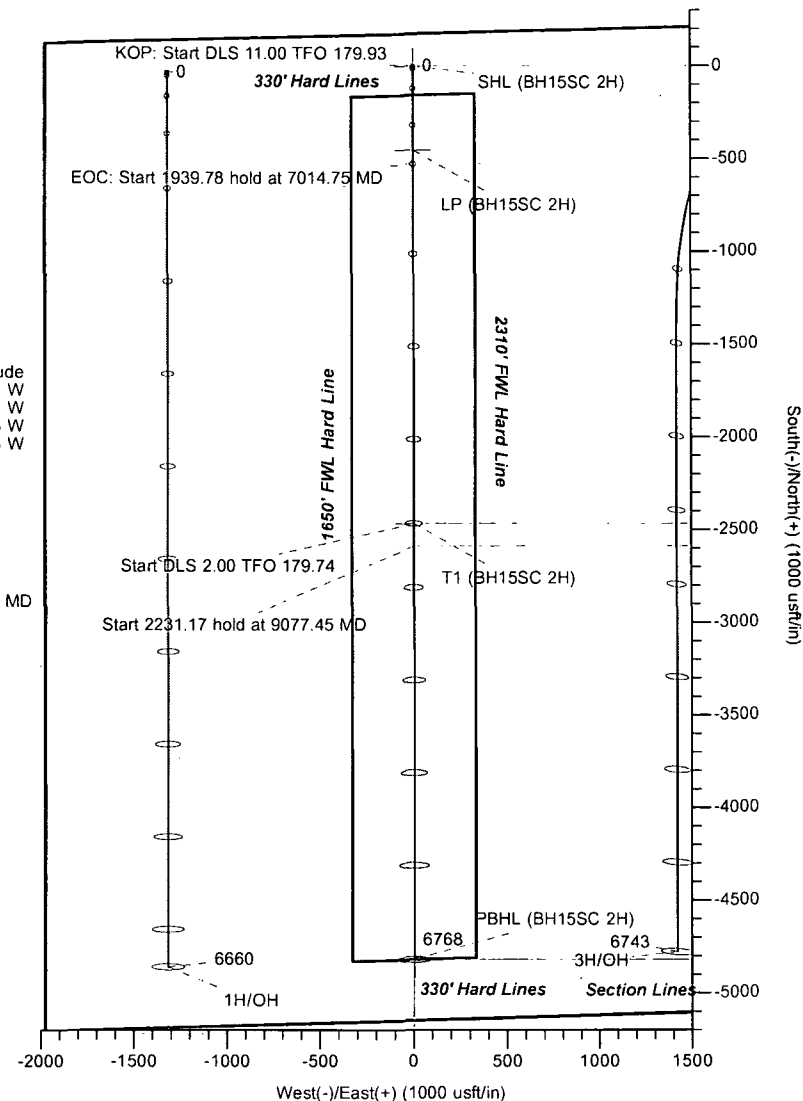
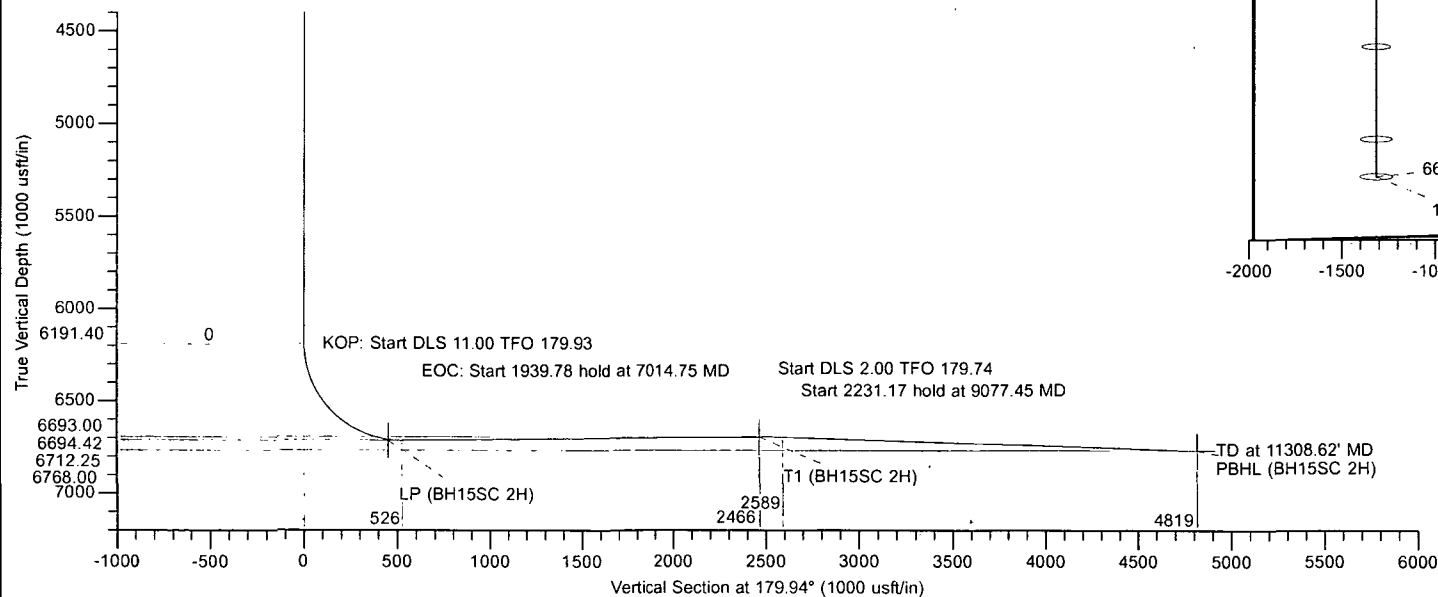
PROJECT DETAILS: Eddy County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (BH15SC 2H)	0.00	0.00	0.00	476964.22	556808.24	32° 18' 40.455 N	104° 16' 59.721 W
T1 (BH15SC 2H)	6693.00	-2465.72	2.86	474498.50	556811.10	32° 18' 16.055 N	104° 16' 59.701 W
LP (BH15SC 2H)	6713.00	-452.15	0.89	476512.07	556809.13	32° 18' 35.981 N	104° 16' 59.713 W
PBHL (BH15SC 2H)	6768.00	-4818.58	5.14	472145.64	556813.38	32° 17' 52.771 N	104° 16' 59.688 W

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	KOP: Start DLS 11.00 TFO 179.93
2	6191.40	0.00	0.00	6191.40	0.00	0.00	0.00	0.00	0.00	EOC: Start 1939.78 hold at 7014.75 MD
3	7014.75	90.57	179.93	6712.25	-526.04	0.61	11.00	179.93	526.04	Start DLS 2.00 TFO 179.74
4	8954.53	90.57	179.93	6693.00	-2465.72	2.86	0.00	0.00	2465.72	Start 2231.17 hold at 9077.45 MD
5	9077.45	88.11	179.94	6694.42	-2588.63	2.99	2.00	179.74	2588.63	TD at 11308.62' MD
6	11308.62	88.11	179.94	6768.00	-4818.58	5.14	0.00	0.00	4818.58	



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

Plan: Plan #1 Draft 1 (2H/OH)
Boss Hogg 15 State Com
Created By: Heber Claros
Date: 12/34, February 20 2014
Approved: _____
Date: _____

DEVON ENERGY

Eddy County, NM (NAD-83)

Boss Hogg 15 State Com

2H

OH

Plan: Plan #1 Draft 1

Standard Planning Report

20 February, 2014

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 2H
Company:	DEVON ENERGY	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site:	Boss Hogg 15 State Com	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 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						Boss Hogg 15 State Com					
Site Position:		Northing:		476,931.39 usft		Latitude:		32° 18' 40.136 N			
From:		Lat/Long		Easting:		555,488.56 usft		Longitude:		104° 17' 15.099 W	
Position Uncertainty:		0.00 usft		Slot Radius:		13-3/16 "		Grid Convergence:		0.02 °	

Well	2H					
Well Position	+N/-S	32.83 usft	Northing:	476,964.22 usft	Latitude:	32° 18' 40.455 N
	+E/-W	1,319.68 usft	Easting:	556,808.24 usft	Longitude:	104° 16' 59.721 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,318.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	02/20/14	7.71	60.06	48,294

Design		Plan #1 Draft 1		
Audit Notes:				
Version:		Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W.	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	179.94

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	
6,191.40	0.00	0.00	6,191.40	0.00	0.00	0.00	0.00	0.00	0.00	
7,014.75	90.57	179.93	6,712.25	-526.04	0.61	11.00	11.00	21.85	179.93	
8,954.53	90.57	179.93	6,693.00	-2,465.72	2.86	0.00	0.00	0.00	0.00	T1 (BH15SC 2H)
9,077.45	88.11	179.94	6,694.42	-2,588.63	2.99	2.00	-2.00	0.01	179.74	
11,308.62	88.11	179.94	6,768.00	-4,818.58	5.14	0.00	0.00	0.00	0.00	PBHL (BH15SC 2H)

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 2H
Company:	DEVON ENERGY	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site:	Boss Hogg 15 State Com	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 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)
6,191.40	0.00	0.00	6,191.40	0.00	0.00	0.00	0.00	0.00	0.00
KOP: Start DLS 11.00 TFO 179.93									
6,200.00	0.95	179.93	6,200.00	-0.07	0.00	0.07	11.00	11.00	0.00
6,250.00	6.45	179.93	6,249.88	-3.29	0.00	3.29	11.00	11.00	0.00
6,300.00	11.95	179.93	6,299.22	-11.28	0.01	11.28	11.00	11.00	0.00
6,350.00	17.45	179.93	6,347.56	-23.96	0.03	23.96	11.00	11.00	0.00
6,400.00	22.95	179.93	6,394.47	-41.22	0.05	41.22	11.00	11.00	0.00
6,450.00	28.45	179.93	6,439.51	-62.89	0.07	62.89	11.00	11.00	0.00
6,500.00	33.95	179.93	6,482.26	-88.77	0.10	88.78	11.00	11.00	0.00
6,550.00	39.45	179.93	6,522.34	-118.64	0.14	118.64	11.00	11.00	0.00
6,600.00	44.95	179.93	6,559.36	-152.21	0.18	152.21	11.00	11.00	0.00
6,650.00	50.45	179.93	6,593.00	-189.18	0.22	189.18	11.00	11.00	0.00
6,700.00	55.95	179.93	6,622.95	-229.20	0.27	229.20	11.00	11.00	0.00
6,750.00	61.45	179.93	6,648.92	-271.90	0.32	271.90	11.00	11.00	0.00
6,800.00	66.95	179.93	6,670.67	-316.90	0.37	316.90	11.00	11.00	0.00
6,850.00	72.45	179.93	6,688.02	-363.77	0.42	363.77	11.00	11.00	0.00
6,900.00	77.95	179.93	6,700.79	-412.10	0.48	412.10	11.00	11.00	0.00
6,941.52	82.51	179.93	6,707.83	-453.00	0.53	453.00	11.00	11.00	0.00
LP (BH15SC 2H)									
6,950.00	83.45	179.93	6,708.87	-461.42	0.53	461.42	11.00	11.00	0.00
7,000.00	88.95	179.93	6,712.18	-511.29	0.59	511.29	11.00	11.00	0.00
7,014.75	90.57	179.93	6,712.25	-526.04	0.61	526.04	11.00	11.00	0.00
EOC: Start 1939.78 hold at 7014.75 MD									
7,100.00	90.57	179.93	6,711.40	-611.28	0.71	611.28	0.00	0.00	0.00
7,200.00	90.57	179.93	6,710.41	-711.28	0.82	711.28	0.00	0.00	0.00
7,300.00	90.57	179.93	6,709.42	-811.27	0.94	811.27	0.00	0.00	0.00
7,400.00	90.57	179.93	6,708.42	-911.27	1.06	911.27	0.00	0.00	0.00
7,500.00	90.57	179.93	6,707.43	-1,011.26	1.17	1,011.26	0.00	0.00	0.00
7,600.00	90.57	179.93	6,706.44	-1,111.26	1.29	1,111.26	0.00	0.00	0.00
7,700.00	90.57	179.93	6,705.45	-1,211.25	1.40	1,211.26	0.00	0.00	0.00
7,800.00	90.57	179.93	6,704.45	-1,311.25	1.52	1,311.25	0.00	0.00	0.00
7,900.00	90.57	179.93	6,703.46	-1,411.24	1.64	1,411.25	0.00	0.00	0.00
8,000.00	90.57	179.93	6,702.47	-1,511.24	1.75	1,511.24	0.00	0.00	0.00
8,100.00	90.57	179.93	6,701.48	-1,611.23	1.87	1,611.24	0.00	0.00	0.00
8,200.00	90.57	179.93	6,700.49	-1,711.23	1.98	1,711.23	0.00	0.00	0.00
8,300.00	90.57	179.93	6,699.49	-1,811.22	2.10	1,811.23	0.00	0.00	0.00
8,400.00	90.57	179.93	6,698.50	-1,911.22	2.22	1,911.22	0.00	0.00	0.00
8,500.00	90.57	179.93	6,697.51	-2,011.21	2.33	2,011.22	0.00	0.00	0.00
8,600.00	90.57	179.93	6,696.52	-2,111.21	2.45	2,111.21	0.00	0.00	0.00
8,700.00	90.57	179.93	6,695.53	-2,211.20	2.56	2,211.21	0.00	0.00	0.00
8,800.00	90.57	179.93	6,694.53	-2,311.20	2.68	2,311.20	0.00	0.00	0.00
8,900.00	90.57	179.93	6,693.54	-2,411.19	2.79	2,411.20	0.00	0.00	0.00
8,954.53	90.57	179.93	6,693.00	-2,465.72	2.86	2,465.72	0.00	0.00	0.00
Start DLS 2.00 TFO 179.74 - T1 (BH15SC 2H)									
9,000.00	89.66	179.94	6,692.91	-2,511.19	2.91	2,511.19	2.00	-2.00	0.01
9,077.45	88.11	179.94	6,694.42	-2,588.63	2.99	2,588.63	2.00	-2.00	0.01
Start 2231.17 hold at 9077.45 MD									
9,100.00	88.11	179.94	6,695.16	-2,611.16	3.01	2,611.16	0.00	0.00	0.00
9,200.00	88.11	179.94	6,698.46	-2,711.11	3.11	2,711.11	0.00	0.00	0.00
9,300.00	88.11	179.94	6,701.76	-2,811.05	3.20	2,811.05	0.00	0.00	0.00
9,400.00	88.11	179.94	6,705.05	-2,911.00	3.30	2,911.00	0.00	0.00	0.00
9,500.00	88.11	179.94	6,708.35	-3,010.94	3.40	3,010.95	0.00	0.00	0.00
9,600.00	88.11	179.94	6,711.65	-3,110.89	3.49	3,110.89	0.00	0.00	0.00

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 2H
Company:	DEVON ENERGY	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site:	Boss Hogg 15 State Com	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 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)	
9,700.00	88.11	179.94	6,714.95	-3,210.84	3.59	3,210.84	0.00	0.00	0.00	
9,800.00	88.11	179.94	6,718.25	-3,310.78	3.69	3,310.78	0.00	0.00	0.00	
9,900.00	88.11	179.94	6,721.54	-3,410.73	3.78	3,410.73	0.00	0.00	0.00	
10,000.00	88.11	179.94	6,724.84	-3,510.67	3.88	3,510.67	0.00	0.00	0.00	
10,100.00	88.11	179.94	6,728.14	-3,610.62	3.98	3,610.62	0.00	0.00	0.00	
10,200.00	88.11	179.94	6,731.44	-3,710.56	4.07	3,710.57	0.00	0.00	0.00	
10,300.00	88.11	179.94	6,734.74	-3,810.51	4.17	3,810.51	0.00	0.00	0.00	
10,400.00	88.11	179.94	6,738.03	-3,910.45	4.27	3,910.46	0.00	0.00	0.00	
10,500.00	88.11	179.94	6,741.33	-4,010.40	4.36	4,010.40	0.00	0.00	0.00	
10,600.00	88.11	179.94	6,744.63	-4,110.35	4.46	4,110.35	0.00	0.00	0.00	
10,700.00	88.11	179.94	6,747.93	-4,210.29	4.56	4,210.29	0.00	0.00	0.00	
10,800.00	88.11	179.94	6,751.23	-4,310.24	4.65	4,310.24	0.00	0.00	0.00	
10,900.00	88.11	179.94	6,754.52	-4,410.18	4.75	4,410.18	0.00	0.00	0.00	
11,000.00	88.11	179.94	6,757.82	-4,510.13	4.85	4,510.13	0.00	0.00	0.00	
11,100.00	88.11	179.94	6,761.12	-4,610.07	4.94	4,610.08	0.00	0.00	0.00	
11,200.00	88.11	179.94	6,764.42	-4,710.02	5.04	4,710.02	0.00	0.00	0.00	
11,308.62	88.11	179.94	6,768.00	-4,818.58	5.14	4,818.58	0.00	0.00	0.00	
TD at 11308.62' MD - PBHL (BH15SC 2H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
SHL (BH15SC 2H)	0.00	0.00	0.00	0.00	0.00	476,964.22	556,808.24	32° 18' 40.455 N		104° 16' 59.721 W
- hit/miss target								- plan misses target center by 6191.40usft at 6191.40usft MD (6191.40 TVD, 0.00 N, 0.00 E)		
- Shape								- Point		
T1 (BH15SC 2H)	0.00	0.00	6,693.00	-2,465.72	2.86	474,498.50	556,811.10	32° 18' 16.055 N		104° 16' 59.701 W
- plan hits target center								- Point		
LP (BH15SC 2H)	0.00	0.00	6,713.00	-452.15	0.89	476,512.07	556,809.13	32° 18' 35.981 N		104° 16' 59.713 W
- plan misses target center by 5.25usft at 6941.52usft MD (6707.83 TVD, -453.00 N, 0.53 E)								- Point		
PBHL (BH15SC 2H)	0.00	0.00	6,768.00	-4,818.58	5.14	472,145.64	556,813.39	32° 17' 52.771 N		104° 16' 59.688 W
- plan hits target center								- Point		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
6,191.40	6,191.40	0.00	0.00	KOP: Start DLS 11.00 TFO 179.93	
7,014.75	6,712.25	-526.04	0.61	EOC: Start 1939.78 hold at 7014.75 MD	
8,954.53	6,693.00	-2,465.72	2.86	Start DLS 2.00 TFO 179.74	
9,077.45	6,694.42	-2,588.63	2.99	Start 2231.17 hold at 9077.45 MD	
11,308.62	6,768.00	-4,818.58	5.14	TD at 11308.62' MD	

DEVON ENERGY

Eddy County, NM (NAD-83)
Boss Hogg 15 State Com
2H

OH
Plan #1 Draft 1

Anticollision Report

20 February, 2014

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Reference	Plan #1 Draft 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	0.00 to 11,308.62usft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 02/20/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.00	11,308.62	Plan #1 Draft 1 (OH)	LEAM MWD-ADJ
			Description
			MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Boss Hogg 15 State Com						
1H - OH - Plan #1 Draft 1	7,043.46	7,000.47	1,319.95	1,285.07	37.842	CC
1H - OH - Plan #1 Draft 1	11,308.62	11,263.71	1,324.39	1,147.86	7.502	ES, SF
3H - OH - Plan #1 Draft 1	11,023.11	11,238.91	1,417.99	1,250.67	8.474	CC
3H - OH - Plan #1 Draft 1	11,300.00	11,483.27	1,418.43	1,241.76	8.029	ES
3H - OH - Plan #1 Draft 1	11,308.62	11,483.27	1,418.66	1,241.83	8.023	SF
4H - OH - Plan #1 Draft 1	11,212.33	11,514.53	2,737.88	2,559.82	15.376	CC
4H - OH - Plan #1 Draft 1	11,300.00	11,530.78	2,738.78	2,558.84	15.221	ES
4H - OH - Plan #1 Draft 1	11,308.62	11,530.78	2,739.01	2,558.92	15.209	SF
4H - Pilot - Plan #1	6,191.40	6,172.40	2,749.13	2,721.62	99.937	CC
4H - Pilot - Plan #1	6,200.00	6,181.00	2,749.13	2,721.59	99.806	ES
4H - Pilot - Plan #1	11,308.62	6,749.00	5,730.48	5,627.00	55.373	SF

Offset Design												
Boss Hogg 15 State Com - 1H - OH - Plan #1 Draft 1												
Survey Program: 0-LEAM MWD-ADJ												
Reference												
Offset												
Semi Major Axis												
Reference												
Offset												
Highside Toolface (°)												
Offset Wellbore Centre												
+N/-S (usft)												
+E/-W (usft)												
Distance												
Between Centres (usft)												
Between Ellipses (usft)												
Minimum Separation (usft)												
Separation Factor												
Warning												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	9.00	0.00	0.00	0.01	-91.43	-32.83	-1,319.68	1,320.09			
100.00	100.00	109.00	100.00	0.08	0.10	-91.43	-32.83	-1,319.68	1,320.09	1,319.90	0.19	6,991.856
200.00	200.00	209.00	200.00	0.31	0.33	-91.43	-32.83	-1,319.68	1,320.09	1,319.45	0.64	2,068.016
300.00	300.00	309.00	300.00	0.53	0.55	-91.43	-32.83	-1,319.68	1,320.09	1,319.00	1.09	1,213.464
400.00	400.00	409.00	400.00	0.76	0.78	-91.43	-32.83	-1,319.68	1,320.09	1,318.55	1.54	858.650
500.00	500.00	509.00	500.00	0.98	1.00	-91.43	-32.83	-1,319.68	1,320.09	1,318.10	1.99	664.385
600.00	600.00	609.00	600.00	1.21	1.23	-91.43	-32.83	-1,319.68	1,320.09	1,317.65	2.44	541.805
700.00	700.00	709.00	700.00	1.43	1.45	-91.43	-32.83	-1,319.68	1,320.09	1,317.20	2.89	457.412
800.00	800.00	809.00	800.00	1.66	1.68	-91.43	-32.83	-1,319.68	1,320.09	1,316.75	3.34	395.766
900.00	900.00	909.00	900.00	1.88	1.90	-91.43	-32.83	-1,319.68	1,320.09	1,316.30	3.79	348.783
1,000.00	1,000.00	1,009.00	1,000.00	2.11	2.13	-91.43	-32.83	-1,319.68	1,320.09	1,315.85	4.23	311.739
1,100.00	1,100.00	1,109.00	1,100.00	2.33	2.35	-91.43	-32.83	-1,319.68	1,320.09	1,315.40	4.68	281.822
1,200.00	1,200.00	1,209.00	1,200.00	2.56	2.58	-91.43	-32.83	-1,319.68	1,320.09	1,314.95	5.13	257.144
1,300.00	1,300.00	1,309.00	1,300.00	2.78	2.80	-91.43	-32.83	-1,319.68	1,320.09	1,314.51	5.58	236.440
1,400.00	1,400.00	1,409.00	1,400.00	3.01	3.03	-91.43	-32.83	-1,319.68	1,320.09	1,314.06	6.03	218.821
1,500.00	1,500.00	1,509.00	1,500.00	3.23	3.25	-91.43	-32.83	-1,319.68	1,320.09	1,313.61	6.48	203.647

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft.	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM.5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,600.00	1,600.00	1,609.00	1,600.00	3.46	3.48	-91.43	-32.83	-1,319.68	1,320.09	1,313.16	6.93	190.440		
1,700.00	1,700.00	1,709.00	1,700.00	3.68	3.70	-91.43	-32.83	-1,319.68	1,320.09	1,312.71	7.38	178.842		
1,800.00	1,800.00	1,809.00	1,800.00	3.91	3.93	-91.43	-32.83	-1,319.68	1,320.09	1,312.26	7.83	168.575		
1,900.00	1,900.00	1,909.00	1,900.00	4.13	4.15	-91.43	-32.83	-1,319.68	1,320.09	1,311.81	8.28	159.424		
2,000.00	2,000.00	2,009.00	2,000.00	4.35	4.38	-91.43	-32.83	-1,319.68	1,320.09	1,311.36	8.73	151.214		
2,100.00	2,100.00	2,109.00	2,100.00	4.58	4.60	-91.43	-32.83	-1,319.68	1,320.09	1,310.91	9.18	143.809		
2,200.00	2,200.00	2,209.00	2,200.00	4.80	4.82	-91.43	-32.83	-1,319.68	1,320.09	1,310.46	9.63	137.095		
2,300.00	2,300.00	2,309.00	2,300.00	5.03	5.05	-91.43	-32.83	-1,319.68	1,320.09	1,310.01	10.08	130.981		
2,400.00	2,400.00	2,409.00	2,400.00	5.25	5.27	-91.43	-32.83	-1,319.68	1,320.09	1,309.56	10.53	125.388		
2,500.00	2,500.00	2,509.00	2,500.00	5.48	5.50	-91.43	-32.83	-1,319.68	1,320.09	1,309.11	10.98	120.253		
2,600.00	2,600.00	2,609.00	2,600.00	5.70	5.72	-91.43	-32.83	-1,319.68	1,320.09	1,308.66	11.43	115.523		
2,700.00	2,700.00	2,709.00	2,700.00	5.93	5.95	-91.43	-32.83	-1,319.68	1,320.09	1,308.21	11.88	111.150		
2,800.00	2,800.00	2,809.00	2,800.00	6.15	6.17	-91.43	-32.83	-1,319.68	1,320.09	1,307.76	12.33	107.096		
2,900.00	2,900.00	2,909.00	2,900.00	6.38	6.40	-91.43	-32.83	-1,319.68	1,320.09	1,307.31	12.78	103.328		
3,000.00	3,000.00	3,009.00	3,000.00	6.60	6.62	-91.43	-32.83	-1,319.68	1,320.09	1,306.86	13.23	99.816		
3,100.00	3,100.00	3,109.00	3,100.00	6.83	6.85	-91.43	-32.83	-1,319.68	1,320.09	1,306.41	13.67	96.535		
3,200.00	3,200.00	3,209.00	3,200.00	7.05	7.07	-91.43	-32.83	-1,319.68	1,320.09	1,305.96	14.12	93.462		
3,300.00	3,300.00	3,309.00	3,300.00	7.28	7.30	-91.43	-32.83	-1,319.68	1,320.09	1,305.51	14.57	90.579		
3,400.00	3,400.00	3,409.00	3,400.00	7.50	7.52	-91.43	-32.83	-1,319.68	1,320.09	1,305.06	15.02	87.869		
3,500.00	3,500.00	3,509.00	3,500.00	7.73	7.75	-91.43	-32.83	-1,319.68	1,320.09	1,304.62	15.47	85.316		
3,600.00	3,600.00	3,609.00	3,600.00	7.95	7.97	-91.43	-32.83	-1,319.68	1,320.09	1,304.17	15.92	82.907		
3,700.00	3,700.00	3,709.00	3,700.00	8.18	8.20	-91.43	-32.83	-1,319.68	1,320.09	1,303.72	16.37	80.631		
3,800.00	3,800.00	3,809.00	3,800.00	8.40	8.42	-91.43	-32.83	-1,319.68	1,320.09	1,303.27	16.82	78.476		
3,900.00	3,900.00	3,909.00	3,900.00	8.63	8.65	-91.43	-32.83	-1,319.68	1,320.09	1,302.82	17.27	76.434		
4,000.00	4,000.00	4,009.00	4,000.00	8.85	8.87	-91.43	-32.83	-1,319.68	1,320.09	1,302.37	17.72	74.495		
4,100.00	4,100.00	4,109.00	4,100.00	9.07	9.10	-91.43	-32.83	-1,319.68	1,320.09	1,301.92	18.17	72.652		
4,200.00	4,200.00	4,209.00	4,200.00	9.30	9.32	-91.43	-32.83	-1,319.68	1,320.09	1,301.47	18.62	70.898		
4,300.00	4,300.00	4,309.00	4,300.00	9.52	9.54	-91.43	-32.83	-1,319.68	1,320.09	1,301.02	19.07	69.226		
4,400.00	4,400.00	4,409.00	4,400.00	9.75	9.77	-91.43	-32.83	-1,319.68	1,320.09	1,300.57	19.52	67.632		
4,500.00	4,500.00	4,509.00	4,500.00	9.97	9.99	-91.43	-32.83	-1,319.68	1,320.09	1,300.12	19.97	66.109		
4,600.00	4,600.00	4,609.00	4,600.00	10.20	10.22	-91.43	-32.83	-1,319.68	1,320.09	1,299.67	20.42	64.654		
4,700.00	4,700.00	4,709.00	4,700.00	10.42	10.44	-91.43	-32.83	-1,319.68	1,320.09	1,299.22	20.87	63.261		
4,800.00	4,800.00	4,809.00	4,800.00	10.65	10.67	-91.43	-32.83	-1,319.68	1,320.09	1,298.77	21.32	61.927		
4,900.00	4,900.00	4,909.00	4,900.00	10.87	10.89	-91.43	-32.83	-1,319.68	1,320.09	1,298.32	21.77	60.648		
5,000.00	5,000.00	5,009.00	5,000.00	11.10	11.12	-91.43	-32.83	-1,319.68	1,320.09	1,297.87	22.22	59.421		
5,100.00	5,100.00	5,109.00	5,100.00	11.32	11.34	-91.43	-32.83	-1,319.68	1,320.09	1,297.42	22.67	58.242		
5,200.00	5,200.00	5,209.00	5,200.00	11.55	11.57	-91.43	-32.83	-1,319.68	1,320.09	1,296.97	23.11	57.110		
5,300.00	5,300.00	5,309.00	5,300.00	11.77	11.79	-91.43	-32.83	-1,319.68	1,320.09	1,296.52	23.56	56.020		
5,400.00	5,400.00	5,409.00	5,400.00	12.00	12.02	-91.43	-32.83	-1,319.68	1,320.09	1,296.07	24.01	54.972		
5,500.00	5,500.00	5,509.00	5,500.00	12.22	12.24	-91.43	-32.83	-1,319.68	1,320.09	1,295.62	24.46	53.961		
5,600.00	5,600.00	5,609.00	5,600.00	12.45	12.47	-91.43	-32.83	-1,319.68	1,320.09	1,295.18	24.91	52.988		
5,700.00	5,700.00	5,709.00	5,700.00	12.67	12.69	-91.43	-32.83	-1,319.68	1,320.09	1,294.73	25.36	52.049		
5,800.00	5,800.00	5,809.00	5,800.00	12.90	12.92	-91.43	-32.83	-1,319.68	1,320.09	1,294.28	25.81	51.142		
5,900.00	5,900.00	5,909.00	5,900.00	13.12	13.14	-91.43	-32.83	-1,319.68	1,320.09	1,293.83	26.26	50.267		
6,000.00	6,000.00	6,009.00	6,000.00	13.35	13.37	-91.43	-32.83	-1,319.68	1,320.09	1,293.38	26.71	49.421		
6,100.00	6,100.00	6,109.00	6,100.00	13.57	13.59	-91.43	-32.83	-1,319.68	1,320.09	1,292.93	27.16	48.603		
6,152.24	6,152.24	6,161.24	6,152.24	13.69	13.71	-91.43	-32.83	-1,319.68	1,320.09	1,292.69	27.40	48.186		
6,191.40	6,191.40	6,199.23	6,190.22	13.78	13.79	-91.44	-33.18	-1,319.68	1,320.10	1,292.53	27.56	47.894		
6,200.00	6,200.00	6,207.32	6,198.31	13.79	13.80	88.61	-33.55	-1,319.68	1,320.10	1,292.51	27.59	47.842		
6,250.00	6,249.88	6,254.32	6,245.06	13.88	13.88	88.54	-38.12	-1,319.67	1,320.15	1,292.40	27.75	47.573		
6,300.00	6,299.22	6,300.00	6,289.94	13.96	13.96	88.48	-46.59	-1,319.67	1,320.18	1,292.28	27.90	47.315		
6,350.00	6,347.56	6,347.97	6,336.07	14.05	14.05	88.43	-59.68	-1,319.65	1,320.21	1,292.15	28.06	47.051		

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design													Offset Site Error:
Boss Hogg 15 State Com - 1H - OH - Plan #1 Draft 1													0.00 usft
Survey Program: 0-LEAM MWD-ADJ													Offset Well Error:
Reference													0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
Warning													
6,400.00	6,394.47	6,394.67	6,379.65	14.14	14.13	88.40		-76.45	-1,319.64	1,320.24	1,292.02	28.22	46.780
6,450.00	6,439.51	6,441.34	6,421.51	14.23	14.21	88.38		-97.03	-1,319.62	1,320.25	1,291.85	28.40	46.487
6,500.00	6,482.26	6,487.98	6,461.34	14.32	14.29	88.38		-121.26	-1,319.59	1,320.26	1,291.65	28.61	46.154
6,550.00	6,522.34	6,534.62	6,498.86	14.44	14.41	88.39		-148.96	-1,319.56	1,320.26	1,291.41	28.85	45.768
6,600.00	6,559.36	6,581.30	6,533.76	14.59	14.55	88.41		-179.92	-1,319.53	1,320.25	1,291.11	29.14	45.314
6,650.00	6,593.00	6,628.03	6,565.79	14.77	14.71	88.45		-213.93	-1,319.50	1,320.23	1,290.75	29.48	44.780
6,700.00	6,622.95	6,674.84	6,594.69	14.99	14.91	88.50		-250.73	-1,319.46	1,320.20	1,290.31	29.90	44.158
6,750.00	6,648.92	6,721.75	6,620.23	15.25	15.14	88.56		-290.07	-1,319.42	1,320.17	1,289.79	30.39	43.444
6,800.00	6,670.67	6,768.80	6,642.17	15.55	15.41	88.64		-331.66	-1,319.38	1,320.14	1,289.18	30.95	42.642
6,850.00	6,688.02	6,815.99	6,660.33	15.90	15.72	88.72		-375.20	-1,319.34	1,320.10	1,288.48	31.61	41.758
6,900.00	6,700.79	6,863.36	6,674.52	16.29	16.07	88.82		-420.38	-1,319.29	1,320.06	1,287.71	32.35	40.807
6,950.00	6,708.87	6,910.93	6,684.58	16.71	16.45	88.93		-466.85	-1,319.24	1,320.01	1,286.85	33.16	39.804
7,000.00	6,712.18	6,958.72	6,690.38	17.17	16.88	89.05		-514.27	-1,319.20	1,319.97	1,285.92	34.05	38.768
7,014.75	6,712.25	6,972.86	6,691.26	17.32	17.01	89.09		-528.39	-1,319.18	1,319.96	1,285.64	34.32	38.456
7,043.46	6,711.96	7,000.47	6,691.87	17.61	17.27	89.13		-555.99	-1,319.15	1,319.95	1,285.07	34.88	37.842 CC
7,100.00	6,711.40	7,056.95	6,691.45	18.20	17.86	89.13		-612.46	-1,319.10	1,319.96	1,283.91	36.05	36.616
7,200.00	6,710.41	7,156.95	6,690.71	19.34	18.96	89.14		-712.46	-1,319.00	1,319.97	1,281.67	38.29	34.469
7,300.00	6,709.42	7,256.95	6,689.97	20.58	20.17	89.16		-812.46	-1,318.90	1,319.98	1,279.23	40.74	32.396
7,400.00	6,708.42	7,356.95	6,689.23	21.90	21.47	89.17		-912.46	-1,318.79	1,319.99	1,276.62	43.37	30.438
7,500.00	6,707.43	7,456.95	6,688.49	23.30	22.84	89.18		-1,012.45	-1,318.69	1,320.00	1,273.87	46.13	28.615
7,600.00	6,706.44	7,556.95	6,687.75	24.74	24.27	89.19		-1,112.45	-1,318.59	1,320.01	1,271.00	49.01	26.933
7,700.00	6,705.45	7,656.95	6,687.00	26.24	25.75	89.20		-1,212.45	-1,318.49	1,320.03	1,268.04	51.99	25.390
7,800.00	6,704.45	7,756.95	6,686.26	27.78	27.28	89.21		-1,312.44	-1,318.39	1,320.04	1,264.99	55.05	23.978
7,900.00	6,703.46	7,856.95	6,685.52	29.35	28.84	89.22		-1,412.44	-1,318.29	1,320.05	1,261.87	58.18	22.688
8,000.00	6,702.47	7,956.94	6,684.78	30.95	30.43	89.23		-1,512.44	-1,318.19	1,320.06	1,258.69	61.37	21.509
8,100.00	6,701.48	8,056.94	6,684.04	32.57	32.04	89.24		-1,612.43	-1,318.09	1,320.07	1,255.46	64.61	20.431
8,200.00	6,700.49	8,156.94	6,683.30	34.22	33.68	89.25		-1,712.43	-1,317.99	1,320.08	1,252.19	67.89	19.443
8,300.00	6,699.49	8,256.94	6,682.56	35.88	35.34	89.26		-1,812.43	-1,317.89	1,320.10	1,248.88	71.21	18.537
8,400.00	6,698.50	8,356.94	6,681.82	37.56	37.01	89.28		-1,912.42	-1,317.79	1,320.11	1,245.54	74.57	17.704
8,500.00	6,697.51	8,456.94	6,681.08	39.25	38.70	89.29		-2,012.42	-1,317.69	1,320.12	1,242.18	77.94	16.937
8,600.00	6,696.52	8,556.94	6,680.34	40.95	40.40	89.30		-2,112.42	-1,317.59	1,320.13	1,238.79	81.35	16.228
8,700.00	6,695.53	8,656.94	6,679.60	42.67	42.11	89.31		-2,212.41	-1,317.49	1,320.15	1,235.37	84.77	15.573
8,800.00	6,694.53	8,756.94	6,678.86	44.39	43.83	89.32		-2,312.41	-1,317.39	1,320.16	1,231.94	88.22	14.965
8,900.00	6,693.54	8,856.94	6,678.11	46.12	45.56	89.33		-2,412.41	-1,317.29	1,320.17	1,228.49	91.68	14.400
8,954.53	6,693.00	8,911.47	6,677.71	47.07	46.51	89.34		-2,468.94	-1,317.23	1,320.18	1,226.61	93.57	14.109
9,000.00	6,692.91	8,956.94	6,677.37	47.78	47.30	89.33		-2,512.40	-1,317.18	1,320.19	1,225.11	95.07	13.886
9,077.45	6,694.42	9,034.36	6,676.80	48.88	48.65	89.24		-2,589.82	-1,317.11	1,320.21	1,222.69	97.52	13.538
9,100.00	6,695.16	9,056.89	6,676.63	49.24	49.04	89.20		-2,612.35	-1,317.08	1,320.23	1,221.95	98.27	13.435
9,200.00	6,698.46	9,156.81	6,675.89	50.99	50.79	89.02		-2,712.27	-1,316.98	1,320.28	1,218.52	101.76	12.974
9,300.00	6,701.76	9,256.73	6,675.15	52.74	52.54	88.85		-2,812.18	-1,316.88	1,320.36	1,215.09	105.27	12.543
9,400.00	6,705.05	9,356.65	6,674.41	54.50	54.30	88.67		-2,912.10	-1,316.78	1,320.44	1,211.66	108.78	12.139
9,500.00	6,708.35	9,456.57	6,673.67	56.26	56.06	88.50		-3,012.02	-1,316.68	1,320.53	1,208.24	112.29	11.760
9,600.00	6,711.65	9,556.48	6,672.93	58.03	57.83	88.32		-3,111.93	-1,316.58	1,320.64	1,204.82	115.82	11.403
9,700.00	6,714.95	9,656.40	6,672.19	59.80	59.60	88.15		-3,211.85	-1,316.48	1,320.76	1,201.41	119.35	11.066
9,800.00	6,718.25	9,756.32	6,671.45	61.58	61.38	87.97		-3,311.76	-1,316.38	1,320.90	1,198.01	122.89	10.749
9,900.00	6,721.54	9,856.24	6,670.71	63.36	63.15	87.80		-3,411.68	-1,316.28	1,321.04	1,194.61	126.43	10.449
10,000.00	6,724.84	9,956.16	6,669.97	65.14	64.93	87.62		-3,511.59	-1,316.18	1,321.20	1,191.22	129.97	10.165
10,100.00	6,728.14	10,056.08	6,669.23	66.92	66.72	87.45		-3,611.51	-1,316.08	1,321.37	1,187.85	133.52	9.896
10,200.00	6,731.44	10,155.99	6,668.49	68.71	68.50	87.27		-3,711.43	-1,315.98	1,321.55	1,184.48	137.07	9.641
10,300.00	6,734.74	10,255.91	6,667.75	70.49	70.29	87.10		-3,811.34	-1,315.88	1,321.75	1,181.12	140.63	9.399
10,400.00	6,738.03	10,355.83	6,667.01	72.28	72.08	86.92		-3,911.26	-1,315.78	1,321.95	1,177.77	144.19	9.168
10,500.00	6,741.33	10,455.75	6,666.27	74.08	73.87	86.75		-4,011.17	-1,315.68	1,322.17	1,174.43	147.74	8.949

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db.
Reference Design:	Plan, #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design													Boss Hogg 15 State Com - 1H - OH - Plan #1 Draft 1		Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD-ADJ													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
10,600.00	6,744.63	10,555.67	6,665.53	75.87	75.66	86.57	-4,111.09	-1,315.58	1,322.40	1,171.10	151.30	8.740				
10,700.00	6,747.93	10,655.59	6,664.79	77.67	77.46	86.40	-4,211.00	-1,315.48	1,322.65	1,167.78	154.86	8.541				
10,800.00	6,751.23	10,755.51	6,664.05	79.46	79.25	86.22	-4,310.92	-1,315.37	1,322.90	1,164.48	158.42	8.350				
10,900.00	6,754.52	10,855.42	6,663.31	81.26	81.05	86.05	-4,410.83	-1,315.27	1,323.17	1,161.19	161.98	8.168				
11,000.00	6,757.82	10,955.34	6,662.57	83.06	82.85	85.88	-4,510.75	-1,315.17	1,323.45	1,157.91	165.55	7.994				
11,100.00	6,761.12	11,055.26	6,661.83	84.86	84.65	85.70	-4,610.67	-1,315.07	1,323.74	1,154.64	169.11	7.828				
11,200.00	6,764.42	11,155.18	6,661.09	86.66	86.45	85.53	-4,710.58	-1,314.97	1,324.05	1,151.38	172.67	7.668				
11,300.00	6,767.72	11,255.10	6,660.35	88.47	88.26	85.35	-4,810.50	-1,314.87	1,324.37	1,148.14	176.23	7.515				
11,308.62	6,768.00	11,263.71	6,660.28	88.62	88.41	85.34	-4,819.11	-1,314.86	1,324.39	1,147.86	176.54	7.502 ES, SF				

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Referenced Datum

Offset Design														Offset Site Error:	0.00 usft
Boss Hogg 15 State Com - 3H - OH - Plan #1 Draft 1														Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ															
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	12.00	0.00	0.00	86.15	117.91	1,750.87	1,754.87						
100.00	100.00	88.00	100.00	0.08	0.07	86.15	117.91	1,750.87	1,754.83	1,754.68	0.16	N/A			
200.00	200.00	188.00	200.00	0.31	0.28	86.15	117.91	1,750.87	1,754.83	1,754.24	0.59	2,968.584			
300.00	300.00	288.00	300.00	0.53	0.51	86.15	117.91	1,750.87	1,754.83	1,753.79	1.04	1,686.258			
400.00	400.00	388.00	400.00	0.76	0.73	86.15	117.91	1,750.87	1,754.83	1,753.34	1.49	1,177.583			
500.00	500.00	488.00	500.00	0.98	0.96	86.15	117.91	1,750.87	1,754.83	1,752.89	1.94	904.679			
600.00	600.00	588.00	600.00	1.21	1.18	86.15	117.91	1,750.87	1,754.83	1,752.44	2.39	734.466			
700.00	700.00	688.00	700.00	1.43	1.41	86.15	117.91	1,750.87	1,754.83	1,751.99	2.84	618.161			
800.00	800.00	788.00	800.00	1.66	1.63	86.15	117.91	1,750.87	1,754.83	1,751.55	3.29	533.655			
900.00	900.00	888.00	900.00	1.88	1.86	86.15	117.91	1,750.87	1,754.83	1,751.10	3.74	469.476			
1,000.00	1,000.00	988.00	1,000.00	2.11	2.08	86.15	117.91	1,750.87	1,754.83	1,750.65	4.19	419.076			
1,100.00	1,100.00	1,088.00	1,100.00	2.33	2.30	86.15	117.91	1,750.87	1,754.83	1,750.20	4.64	378.448			
1,200.00	1,200.00	1,188.00	1,200.00	2.56	2.53	86.15	117.91	1,750.87	1,754.83	1,749.75	5.09	345.001			
1,300.00	1,300.00	1,288.00	1,300.00	2.78	2.75	86.15	117.91	1,750.87	1,754.83	1,749.30	5.54	316.987			
1,400.00	1,400.00	1,388.00	1,400.00	3.01	2.98	86.15	117.91	1,750.87	1,754.83	1,748.85	5.99	293.180			
1,500.00	1,500.00	1,488.00	1,500.00	3.23	3.20	86.15	117.91	1,750.87	1,754.83	1,748.40	6.44	272.699			
1,600.00	1,600.00	1,588.00	1,600.00	3.46	3.43	86.15	117.91	1,750.87	1,754.83	1,747.95	6.88	254.893			
1,700.00	1,700.00	1,688.00	1,700.00	3.68	3.65	86.15	117.91	1,750.87	1,754.83	1,747.50	7.33	239.270			
1,800.00	1,800.00	1,788.00	1,800.00	3.91	3.88	86.15	117.91	1,750.87	1,754.83	1,747.05	7.78	225.451			
1,900.00	1,900.00	1,888.00	1,900.00	4.13	4.10	86.15	117.91	1,750.87	1,754.83	1,746.60	8.23	213.142			
2,000.00	2,000.00	1,988.00	2,000.00	4.35	4.33	86.15	117.91	1,750.87	1,754.83	1,746.15	8.68	202.107			
2,100.00	2,100.00	2,088.00	2,100.00	4.58	4.55	86.15	117.91	1,750.87	1,754.83	1,745.70	9.13	192.158			
2,200.00	2,200.00	2,188.00	2,200.00	4.80	4.78	86.15	117.91	1,750.87	1,754.83	1,745.25	9.58	183.143			
2,300.00	2,300.00	2,288.00	2,300.00	5.03	5.00	86.15	117.91	1,750.87	1,754.83	1,744.80	10.03	174.936			
2,400.00	2,400.00	2,388.00	2,400.00	5.25	5.23	86.15	117.91	1,750.87	1,754.83	1,744.35	10.48	167.433			
2,500.00	2,500.00	2,488.00	2,500.00	5.48	5.45	86.15	117.91	1,750.87	1,754.83	1,743.90	10.93	160.547			
2,600.00	2,600.00	2,588.00	2,600.00	5.70	5.68	86.15	117.91	1,750.87	1,754.83	1,743.45	11.38	154.205			
2,700.00	2,700.00	2,688.00	2,700.00	5.93	5.90	86.15	117.91	1,750.87	1,754.83	1,743.00	11.83	148.345			
2,800.00	2,800.00	2,788.00	2,800.00	6.15	6.13	86.15	117.91	1,750.87	1,754.83	1,742.55	12.28	142.914			
2,900.00	2,900.00	2,888.00	2,900.00	6.38	6.35	86.15	117.91	1,750.87	1,754.83	1,742.10	12.73	137.866			
3,000.00	3,000.00	2,988.00	3,000.00	6.60	6.58	86.15	117.91	1,750.87	1,754.83	1,741.66	13.18	133.164			
3,100.00	3,100.00	3,088.00	3,100.00	6.83	6.80	86.15	117.91	1,750.87	1,754.83	1,741.21	13.63	128.771			
3,200.00	3,200.00	3,188.00	3,200.00	7.05	7.03	86.15	117.91	1,750.87	1,754.83	1,740.76	14.08	124.659			
3,300.00	3,300.00	3,288.00	3,300.00	7.28	7.25	86.15	117.91	1,750.87	1,754.83	1,740.31	14.53	120.801			
3,400.00	3,400.00	3,388.00	3,400.00	7.50	7.47	86.15	117.91	1,750.87	1,754.83	1,739.86	14.98	117.175			
3,500.00	3,500.00	3,488.00	3,500.00	7.73	7.70	86.15	117.91	1,750.87	1,754.83	1,739.41	15.43	113.760			
3,600.00	3,600.00	3,588.00	3,600.00	7.95	7.92	86.15	117.91	1,750.87	1,754.83	1,738.96	15.88	110.539			
3,700.00	3,700.00	3,688.00	3,700.00	8.18	8.15	86.15	117.91	1,750.87	1,754.83	1,738.51	16.32	107.495			
3,800.00	3,800.00	3,788.00	3,800.00	8.40	8.37	86.15	117.91	1,750.87	1,754.83	1,738.06	16.77	104.614			
3,900.00	3,900.00	3,888.00	3,900.00	8.63	8.60	86.15	117.91	1,750.87	1,754.83	1,737.61	17.22	101.884			
4,000.00	4,000.00	3,988.00	4,000.00	8.85	8.82	86.15	117.91	1,750.87	1,754.83	1,737.16	17.67	99.293			
4,100.00	4,100.00	4,088.00	4,100.00	9.07	9.05	86.15	117.91	1,750.87	1,754.83	1,736.71	18.12	96.830			
4,200.00	4,200.00	4,188.00	4,200.00	9.30	9.27	86.15	117.91	1,750.87	1,754.83	1,736.26	18.57	94.486			
4,300.00	4,300.00	4,288.00	4,300.00	9.52	9.50	86.15	117.91	1,750.87	1,754.83	1,735.81	19.02	92.253			
4,400.00	4,400.00	4,388.00	4,400.00	9.75	9.72	86.15	117.91	1,750.87	1,754.83	1,735.36	19.47	90.123			
4,500.00	4,500.00	4,488.00	4,500.00	9.97	9.95	86.15	117.91	1,750.87	1,754.83	1,734.91	19.92	88.090			
4,600.00	4,600.00	4,588.00	4,600.00	10.20	10.17	86.15	117.91	1,750.87	1,754.83	1,734.46	20.37	86.146			
4,700.00	4,700.00	4,688.00	4,700.00	10.42	10.40	86.15	117.91	1,750.87	1,754.83	1,734.01	20.82	84.286			
4,800.00	4,800.00	4,788.00	4,800.00	10.65	10.62	86.15	117.91	1,750.87	1,754.83	1,733.56	21.27	82.504			
4,900.00	4,900.00	4,888.00	4,900.00	10.87	10.85	86.15	117.91	1,750.87	1,754.83	1,733.11	21.72	80.797			
5,000.00	5,000.00	4,988.00	5,000.00	11.10	11.07	86.15	117.91	1,750.87	1,754.83	1,732.66	22.17	79.158			
5,100.00	5,100.00	5,088.00	5,100.00	11.32	11.30	86.15	117.91	1,750.87	1,754.83	1,732.22	22.62	77.585			

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,200.00	5,188.00	5,200.00	11.55	11.52	86.15	117.91	1,750.87	1,754.83	1,731.77	23.07	76.073	
5,300.00	5,300.00	5,288.00	5,300.00	11.77	11.75	86.15	117.91	1,750.87	1,754.83	1,731.32	23.52	74.619	
5,400.00	5,400.00	5,388.00	5,400.00	12.00	11.97	86.15	117.91	1,750.87	1,754.83	1,730.87	23.97	73.219	
5,500.00	5,500.00	5,488.00	5,500.00	12.22	12.19	86.15	117.91	1,750.87	1,754.83	1,730.42	24.42	71.871	
5,600.00	5,600.00	5,588.00	5,600.00	12.45	12.42	86.15	117.91	1,750.87	1,754.83	1,729.97	24.87	70.572	
5,700.00	5,700.00	5,688.00	5,700.00	12.67	12.64	86.15	117.91	1,750.87	1,754.83	1,729.52	25.32	69.319	
5,800.00	5,800.00	5,788.00	5,800.00	12.90	12.87	86.15	117.91	1,750.87	1,754.83	1,729.07	25.76	68.109	
5,900.00	5,900.00	5,888.00	5,900.00	13.12	13.09	86.15	117.91	1,750.87	1,754.83	1,728.62	26.21	66.941	
6,000.00	6,000.00	5,988.00	6,000.00	13.35	13.32	86.15	117.91	1,750.87	1,754.83	1,728.17	26.66	65.813	
6,100.00	6,100.00	6,088.00	6,100.00	13.57	13.54	86.15	117.91	1,750.87	1,754.83	1,727.72	27.11	64.722	
6,191.40	6,191.40	7,177.10	6,779.19	13.78	18.60	107.32	-484.12	1,552.24	1,728.96	1,696.60	32.37	53.413	
6,200.00	6,200.00	7,177.17	6,779.19	13.79	18.60	-72.94	-484.18	1,552.22	1,726.04	1,693.65	32.39	53.297	
6,250.00	6,249.88	7,179.26	6,779.20	13.88	18.62	-74.77	-486.18	1,551.59	1,709.03	1,676.57	32.47	52.641	
6,300.00	6,299.22	7,184.26	6,779.22	13.96	18.67	-76.51	-490.95	1,550.11	1,692.12	1,659.56	32.56	51.968	
6,350.00	6,347.56	7,200.00	6,779.29	14.05	18.84	-77.87	-506.00	1,545.48	1,675.46	1,642.70	32.76	51.140	
6,400.00	6,394.47	7,200.00	6,779.29	14.14	18.84	-79.74	-506.00	1,545.48	1,659.05	1,626.26	32.80	50.586	
6,450.00	6,439.51	7,200.00	6,779.29	14.23	18.84	-81.56	-506.00	1,545.48	1,643.19	1,610.35	32.84	50.032	
6,500.00	6,482.26	7,232.22	6,779.42	14.32	19.19	-82.31	-536.87	1,536.26	1,627.53	1,594.28	33.26	48.939	
6,550.00	6,522.34	7,250.74	6,779.50	14.44	19.39	-83.49	-554.67	1,531.11	1,612.49	1,578.95	33.54	48.072	
6,600.00	6,559.36	7,271.63	6,779.59	14.59	19.62	-84.58	-574.77	1,525.45	1,597.97	1,564.09	33.88	47.160	
6,650.00	6,593.00	7,300.00	6,779.71	14.77	19.93	-85.47	-602.14	1,518.00	1,584.00	1,549.66	34.34	46.129	
6,700.00	6,622.95	7,319.79	6,779.79	14.99	20.16	-86.57	-621.28	1,512.96	1,570.53	1,535.77	34.76	45.181	
6,750.00	6,648.92	7,346.66	6,779.90	15.25	20.48	-87.52	-647.32	1,506.33	1,557.62	1,522.31	35.31	44.116	
6,800.00	6,670.67	7,375.09	6,780.02	15.55	20.82	-88.46	-674.94	1,499.58	1,545.24	1,509.33	35.92	43.024	
6,850.00	6,688.02	7,400.00	6,780.13	15.90	21.11	-89.47	-699.19	1,493.89	1,533.44	1,496.91	36.53	41.979	
6,900.00	6,700.79	7,435.65	6,780.28	16.29	21.56	-90.39	-733.98	1,486.12	1,522.19	1,484.85	37.34	40.769	
6,950.00	6,708.87	7,467.23	6,780.41	16.71	21.96	-91.40	-764.88	1,479.59	1,511.56	1,473.42	38.14	39.636	
7,000.00	6,712.18	7,500.00	6,780.55	17.17	22.37	-92.45	-797.01	1,473.18	1,501.61	1,462.63	38.99	38.518	
7,014.75	6,712.25	7,500.00	6,780.55	17.32	22.37	-92.76	-797.01	1,473.18	1,498.86	1,459.73	39.12	38.310	
7,100.00	6,711.40	7,563.99	6,780.82	18.20	23.21	-92.82	-859.97	1,461.73	1,483.66	1,442.84	40.82	36.342	
7,200.00	6,710.41	7,629.18	6,781.10	19.34	24.08	-92.87	-924.35	1,451.51	1,467.95	1,425.13	42.82	34.282	
7,300.00	6,709.42	7,700.00	6,781.39	20.58	25.05	-92.93	-994.54	1,442.07	1,454.52	1,409.51	45.01	32.314	
7,400.00	6,708.42	7,760.83	6,781.65	21.90	25.90	-92.98	-1,054.99	1,435.35	1,443.34	1,396.15	47.18	30.590	
7,500.00	6,707.43	7,827.15	6,781.93	23.30	26.84	-93.03	-1,121.05	1,429.49	1,434.47	1,384.96	49.51	28.972	
7,600.00	6,706.44	7,900.00	6,782.23	24.74	27.88	-93.08	-1,193.75	1,424.82	1,427.93	1,375.92	52.01	27.455	
7,700.00	6,705.45	7,960.45	6,782.49	26.24	28.77	-93.12	-1,254.14	1,422.34	1,423.67	1,369.27	54.40	26.172	
7,800.00	6,704.45	8,027.28	6,782.76	27.78	29.75	-93.16	-1,320.96	1,421.09	1,421.76	1,364.84	56.93	24.976	
7,841.68	6,704.04	8,058.12	6,782.89	28.43	30.20	-93.18	-1,351.80	1,421.02	1,421.64	1,363.60	58.04	24.493	
7,900.00	6,703.46	8,116.43	6,783.13	29.35	31.06	-93.21	-1,410.11	1,421.06	1,421.66	1,361.83	59.83	23.763	
8,000.00	6,702.47	8,216.42	6,783.55	30.95	32.54	-93.27	-1,510.10	1,421.11	1,421.68	1,358.75	62.92	22.594	
8,100.00	6,701.48	8,316.41	6,783.96	32.57	34.06	-93.33	-1,610.09	1,421.17	1,421.70	1,355.62	66.07	21.517	
8,200.00	6,700.49	8,416.40	6,784.38	34.22	35.60	-93.38	-1,710.08	1,421.23	1,421.72	1,352.45	69.27	20.523	
8,300.00	6,699.49	8,516.39	6,784.79	35.88	37.17	-93.44	-1,810.07	1,421.28	1,421.74	1,349.23	72.52	19.606	
8,400.00	6,698.50	8,616.38	6,785.21	37.56	38.76	-93.50	-1,910.06	1,421.34	1,421.77	1,345.98	75.79	18.758	
8,500.00	6,697.51	8,716.37	6,785.62	39.25	40.37	-93.55	-2,010.05	1,421.40	1,421.80	1,342.69	79.11	17.973	
8,600.00	6,696.52	8,816.36	6,786.04	40.95	42.00	-93.61	-2,110.04	1,421.45	1,421.83	1,339.38	82.45	17.246	
8,700.00	6,695.53	8,916.35	6,786.45	42.67	43.65	-93.67	-2,210.03	1,421.51	1,421.86	1,336.05	85.81	16.570	
8,800.00	6,694.53	9,016.34	6,786.86	44.39	45.31	-93.72	-2,310.02	1,421.56	1,421.89	1,332.69	89.20	15.941	
8,900.00	6,693.54	9,116.43	6,786.44	46.12	47.01	-93.75	-2,412.10	1,421.62	1,421.87	1,329.23	92.64	15.348	
8,954.53	6,693.00	9,172.98	6,785.44	47.07	47.93	-93.73	-2,466.62	1,421.65	1,421.80	1,327.29	94.51	15.044	
9,000.00	6,692.91	9,218.42	6,784.80	47.78	48.70	-93.70	-2,512.08	1,421.68	1,421.73	1,325.74	95.99	14.811	
9,077.45	6,694.42	9,295.82	6,783.18	48.88	50.01	-93.58	-2,589.46	1,421.72	1,421.51	1,323.10	98.41	14.445	

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,100.00	6,695.16	9,318.34	6,782.77	49.24	50.39	-93.53	-2,611.97	1,421.74	1,421.43	1,322.27	99.15	14.336		
9,200.00	6,698.46	9,418.20	6,780.93	50.99	52.09	-93.32	-2,711.82	1,421.79	1,421.08	1,318.45	102.63	13.847		
9,300.00	6,701.76	9,518.07	6,779.10	52.74	53.80	-93.12	-2,811.67	1,421.85	1,420.75	1,314.64	106.11	13.389		
9,400.00	6,705.05	9,617.94	6,777.27	54.50	55.52	-92.91	-2,911.52	1,421.90	1,420.44	1,310.83	109.61	12.959		
9,500.00	6,708.35	9,717.81	6,775.43	56.26	57.24	-92.70	-3,011.38	1,421.96	1,420.15	1,307.03	113.12	12.554		
9,600.00	6,711.65	9,817.68	6,773.60	58.03	58.97	-92.50	-3,111.23	1,422.02	1,419.88	1,303.24	116.64	12.173		
9,700.00	6,714.95	9,917.54	6,771.76	59.80	60.71	-92.29	-3,211.08	1,422.07	1,419.62	1,299.45	120.17	11.814		
9,800.00	6,718.25	10,017.41	6,769.93	61.58	62.45	-92.08	-3,310.93	1,422.13	1,419.38	1,295.68	123.70	11.474		
9,900.00	6,721.54	10,117.28	6,768.09	63.36	64.20	-91.88	-3,410.78	1,422.19	1,419.17	1,291.92	127.25	11.153		
10,000.00	6,724.84	10,217.15	6,766.26	65.14	65.95	-91.67	-3,510.63	1,422.24	1,418.97	1,288.17	130.79	10.849		
10,100.00	6,728.14	10,317.02	6,764.42	66.92	67.70	-91.46	-3,610.48	1,422.30	1,418.79	1,284.44	134.35	10.561		
10,200.00	6,731.44	10,416.89	6,762.59	68.71	68.46	-91.26	-3,710.33	1,422.35	1,418.62	1,280.72	137.91	10.287		
10,300.00	6,734.74	10,516.75	6,760.75	70.49	71.22	-91.05	-3,810.19	1,422.41	1,418.48	1,277.01	141.47	10.027		
10,400.00	6,738.03	10,616.62	6,758.92	72.28	72.98	-90.84	-3,910.04	1,422.47	1,418.36	1,273.32	145.04	9.779		
10,500.00	6,741.33	10,716.49	6,757.09	74.08	74.75	-90.63	-4,009.89	1,422.52	1,418.25	1,269.64	148.61	9.544		
10,600.00	6,744.63	10,816.36	6,755.25	75.87	76.52	-90.43	-4,109.74	1,422.58	1,418.16	1,265.98	152.18	9.319		
10,700.00	6,747.93	10,916.23	6,753.42	77.67	78.30	-90.22	-4,209.59	1,422.64	1,418.09	1,262.33	155.76	9.104		
10,800.00	6,751.23	11,016.09	6,751.58	79.46	80.07	-90.01	-4,309.44	1,422.69	1,418.04	1,258.71	159.34	8.900		
10,900.00	6,754.52	11,115.96	6,749.75	81.26	81.85	-89.81	-4,409.29	1,422.75	1,418.01	1,255.09	162.92	8.704		
11,000.00	6,757.82	11,215.83	6,747.91	83.06	83.63	-89.60	-4,509.15	1,422.81	1,418.00	1,251.50	166.50	8.517		
11,023.11	6,758.58	11,238.91	6,747.49	83.48	84.04	-89.55	-4,532.22	1,422.82	1,417.99	1,250.67	167.33	8.474 CC		
11,100.00	6,761.12	11,315.70	6,746.08	84.86	85.41	-89.39	-4,609.00	1,422.86	1,418.00	1,247.92	170.08	8.337		
11,200.00	6,764.42	11,415.57	6,744.24	86.66	87.20	-89.19	-4,708.85	1,422.92	1,418.02	1,244.36	173.66	8.165		
11,243.41	6,765.85	11,458.92	6,743.45	87.45	87.97	-89.10	-4,752.19	1,422.94	1,418.04	1,242.82	175.22	8.093		
11,300.00	6,767.72	11,483.27	6,743.00	88.47	88.41	-89.04	-4,776.54	1,422.96	1,418.43	1,241.76	176.67	8.029 ES		
11,308.62	6,768.00	11,483.27	6,743.00	88.62	88.41	-89.04	-4,776.54	1,422.96	1,418.66	1,241.83	176.83	8.023 SF		

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design										Boss Hogg 15 State Com - 4H - OH - Plan #1 Draft 1		Offset Site Error: 0.00 usft	
Survey Program:										Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	19.00	0.00	0.00	85.48	216.89	2,740.56	2,749.19				
100.00	100.00	81.00	100.00	0.08	0.07	85.48	216.89	2,740.56	2,749.13	2,748.98	0.15	N/A	
200.00	200.00	181.00	200.00	0.31	0.27	85.48	216.89	2,740.56	2,749.13	2,748.55	0.58	4,777.760	
300.00	300.00	281.00	300.00	0.53	0.49	85.48	216.89	2,740.56	2,749.13	2,748.10	1.02	2,682.252	
400.00	400.00	381.00	400.00	0.76	0.72	85.48	216.89	2,740.56	2,749.13	2,747.65	1.47	1,864.492	
500.00	500.00	481.00	500.00	0.98	0.94	85.48	216.89	2,740.56	2,749.13	2,747.21	1.92	1,428.863	
600.00	600.00	581.00	600.00	1.21	1.17	85.48	216.89	2,740.56	2,749.13	2,746.76	2.37	1,158.245	
700.00	700.00	681.00	700.00	1.43	1.39	85.48	216.89	2,740.56	2,749.13	2,746.31	2.82	973.811	
800.00	800.00	781.00	800.00	1.66	1.61	85.48	216.89	2,740.56	2,749.13	2,745.86	3.27	840.046	
900.00	900.00	881.00	900.00	1.88	1.84	85.48	216.89	2,740.56	2,749.13	2,745.41	3.72	738.591	
1,000.00	1,000.00	981.00	1,000.00	2.11	2.06	85.48	216.89	2,740.56	2,749.13	2,744.96	4.17	659.002	
1,100.00	1,100.00	1,081.00	1,100.00	2.33	2.29	85.48	216.89	2,740.56	2,749.13	2,744.51	4.62	594.896	
1,200.00	1,200.00	1,181.00	1,200.00	2.56	2.51	85.48	216.89	2,740.56	2,749.13	2,744.06	5.07	542.157	
1,300.00	1,300.00	1,281.00	1,300.00	2.78	2.74	85.48	216.89	2,740.56	2,749.13	2,743.61	5.52	498.008	
1,400.00	1,400.00	1,381.00	1,400.00	3.01	2.96	85.48	216.89	2,740.56	2,749.13	2,743.16	5.97	460.507	
1,500.00	1,500.00	1,481.00	1,500.00	3.23	3.19	85.48	216.89	2,740.56	2,749.13	2,742.71	6.42	428.259	
1,600.00	1,600.00	1,581.00	1,600.00	3.46	3.41	85.48	216.89	2,740.56	2,749.13	2,742.26	6.87	400.231	
1,700.00	1,700.00	1,681.00	1,700.00	3.68	3.64	85.48	216.89	2,740.56	2,749.13	2,741.81	7.32	375.647	
1,800.00	1,800.00	1,781.00	1,800.00	3.91	3.86	85.48	216.89	2,740.56	2,749.13	2,741.36	7.77	353.908	
1,900.00	1,900.00	1,881.00	1,900.00	4.13	4.09	85.48	216.89	2,740.56	2,749.13	2,740.91	8.22	334.548	
2,000.00	2,000.00	1,981.00	2,000.00	4.35	4.31	85.48	216.89	2,740.56	2,749.13	2,740.46	8.67	317.196	
2,100.00	2,100.00	2,081.00	2,100.00	4.58	4.54	85.48	216.89	2,740.56	2,749.13	2,740.01	9.12	301.555	
2,200.00	2,200.00	2,181.00	2,200.00	4.80	4.76	85.48	216.89	2,740.56	2,749.13	2,739.56	9.57	287.384	
2,300.00	2,300.00	2,281.00	2,300.00	5.03	4.99	85.48	216.89	2,740.56	2,749.13	2,739.11	10.02	274.485	
2,400.00	2,400.00	2,381.00	2,400.00	5.25	5.21	85.48	216.89	2,740.56	2,749.13	2,738.66	10.47	262.695	
2,500.00	2,500.00	2,481.00	2,500.00	5.48	5.44	85.48	216.89	2,740.56	2,749.13	2,738.21	10.91	251.875	
2,600.00	2,600.00	2,581.00	2,600.00	5.70	5.66	85.48	216.89	2,740.56	2,749.13	2,737.76	11.36	241.912	
2,700.00	2,700.00	2,681.00	2,700.00	5.93	5.89	85.48	216.89	2,740.56	2,749.13	2,737.32	11.81	232.707	
2,800.00	2,800.00	2,781.00	2,800.00	6.15	6.11	85.48	216.89	2,740.56	2,749.13	2,736.87	12.26	224.176	
2,900.00	2,900.00	2,881.00	2,900.00	6.38	6.34	85.48	216.89	2,740.56	2,749.13	2,736.42	12.71	216.249	
3,000.00	3,000.00	2,981.00	3,000.00	6.60	6.56	85.48	216.89	2,740.56	2,749.13	2,735.97	13.16	208.864	
3,100.00	3,100.00	3,081.00	3,100.00	6.83	6.78	85.48	216.89	2,740.56	2,749.13	2,735.52	13.61	201.966	
3,200.00	3,200.00	3,181.00	3,200.00	7.05	7.01	85.48	216.89	2,740.56	2,749.13	2,735.07	14.06	195.509	
3,300.00	3,300.00	3,281.00	3,300.00	7.28	7.23	85.48	216.89	2,740.56	2,749.13	2,734.62	14.51	189.453	
3,400.00	3,400.00	3,381.00	3,400.00	7.50	7.46	85.48	216.89	2,740.56	2,749.13	2,734.17	14.96	183.760	
3,500.00	3,500.00	3,481.00	3,500.00	7.73	7.68	85.48	216.89	2,740.56	2,749.13	2,733.72	15.41	178.399	
3,600.00	3,600.00	3,581.00	3,600.00	7.95	7.91	85.48	216.89	2,740.56	2,749.13	2,733.27	15.86	173.343	
3,700.00	3,700.00	3,681.00	3,700.00	8.18	8.13	85.48	216.89	2,740.56	2,749.13	2,732.82	16.31	168.565	
3,800.00	3,800.00	3,781.00	3,800.00	8.40	8.36	85.48	216.89	2,740.56	2,749.13	2,732.37	16.76	164.043	
3,900.00	3,900.00	3,881.00	3,900.00	8.63	8.58	85.48	216.89	2,740.56	2,749.13	2,731.92	17.21	159.758	
4,000.00	4,000.00	3,981.00	4,000.00	8.85	8.81	85.48	216.89	2,740.56	2,749.13	2,731.47	17.66	155.691	
4,100.00	4,100.00	4,081.00	4,100.00	9.07	9.03	85.48	216.89	2,740.56	2,749.13	2,731.02	18.11	151.826	
4,200.00	4,200.00	4,181.00	4,200.00	9.30	9.26	85.48	216.89	2,740.56	2,749.13	2,730.57	18.56	148.148	
4,300.00	4,300.00	4,281.00	4,300.00	9.52	9.48	85.48	216.89	2,740.56	2,749.13	2,730.12	19.01	144.644	
4,400.00	4,400.00	4,381.00	4,400.00	9.75	9.71	85.48	216.89	2,740.56	2,749.13	2,729.67	19.46	141.302	
4,500.00	4,500.00	4,481.00	4,500.00	9.97	9.93	85.48	216.89	2,740.56	2,749.13	2,729.22	19.91	138.111	
4,600.00	4,600.00	4,581.00	4,600.00	10.20	10.16	85.48	216.89	2,740.56	2,749.13	2,728.77	20.35	135.050	
4,700.00	4,700.00	4,681.00	4,700.00	10.42	10.38	85.48	216.89	2,740.56	2,749.13	2,728.32	20.80	132.142	
4,800.00	4,800.00	4,781.00	4,800.00	10.65	10.61	85.48	216.89	2,740.56	2,749.13	2,727.88	21.25	129.347	
4,900.00	4,900.00	4,881.00	4,900.00	10.87	10.83	85.48	216.89	2,740.56	2,749.13	2,727.43	21.70	126.668	
5,000.00	5,000.00	4,981.00	5,000.00	11.10	11.06	85.48	216.89	2,740.56	2,749.13	2,726.98	22.15	124.098	
5,100.00	5,100.00	5,081.00	5,100.00	11.32	11.28	85.48	216.89	2,740.56	2,749.13	2,726.53	22.60	121.630	

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: Boss Hogg 15 State Com - 4H - OH - Plan #1 Draft 1												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooltface ' (")	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)					
5,200.00	5,200.00	5,181.00	5,200.00	11.55	11.50	85.48	216.89	2,740.56	2,749.13	2,726.08	23.05	119.258	
5,300.00	5,300.00	5,281.00	5,300.00	11.77	11.73	85.48	216.89	2,740.56	2,749.13	2,725.63	23.50	116.977	
5,400.00	5,400.00	5,381.00	5,400.00	12.00	11.95	85.48	216.89	2,740.56	2,749.13	2,725.18	23.95	114.781	
5,500.00	5,500.00	5,481.00	5,500.00	12.22	12.18	85.48	216.89	2,740.56	2,749.13	2,724.73	24.40	112.666	
5,600.00	5,600.00	5,581.00	5,600.00	12.45	12.40	85.48	216.89	2,740.56	2,749.13	2,724.28	24.85	110.628	
5,700.00	5,700.00	5,681.00	5,700.00	12.67	12.63	85.48	216.89	2,740.56	2,749.13	2,723.83	25.30	108.663	
5,800.00	5,800.00	5,781.00	5,800.00	12.90	12.85	85.48	216.89	2,740.56	2,749.13	2,723.38	25.75	106.766	
5,900.00	5,900.00	5,881.00	5,900.00	13.12	13.08	85.48	216.89	2,740.56	2,749.13	2,722.93	26.20	104.934	
6,000.00	6,000.00	5,981.00	6,000.00	13.35	13.30	85.48	216.89	2,740.56	2,749.13	2,722.48	26.65	103.164	
6,100.00	6,100.00	6,081.00	6,100.00	13.57	13.53	85.48	216.89	2,740.56	2,749.13	2,722.03	27.10	101.452	
6,191.40	6,191.40	6,172.40	6,191.40	13.78	13.73	85.48	216.89	2,740.56	2,749.13	2,721.62	27.51	99.937	
6,200.00	6,200.00	6,181.00	6,200.00	13.79	13.75	-94.46	216.89	2,740.56	2,749.13	2,721.59	27.54	99.806	
6,250.00	6,249.88	6,230.88	6,249.88	13.88	13.86	-94.50	216.89	2,740.56	2,749.39	2,721.65	27.74	99.123	
6,300.00	6,299.22	6,280.22	6,299.22	13.96	13.98	-94.59	216.89	2,740.56	2,750.03	2,722.10	27.93	98.478	
6,350.00	6,347.56	6,353.13	6,372.04	14.05	14.12	-94.83	214.36	2,740.56	2,750.99	2,722.84	28.14	97.758	
6,400.00	6,394.47	6,453.59	6,470.15	14.14	14.29	-95.06	193.65	2,740.57	2,751.61	2,723.23	28.38	96.964	
6,450.00	6,439.51	6,556.96	6,564.29	14.23	14.47	-95.11	151.43	2,740.59	2,751.72	2,723.07	28.64	96.068	
6,500.00	6,482.26	6,659.20	6,646.33	14.32	14.70	-94.96	90.75	2,740.62	2,751.28	2,722.30	28.98	94.923	
6,550.00	6,522.34	6,756.59	6,710.79	14.44	15.04	-94.65	17.97	2,740.65	2,750.38	2,720.84	29.44	93.413	
6,600.00	6,559.36	6,846.68	6,756.16	14.59	15.48	-94.22	-59.70	2,740.69	2,749.12	2,719.09	30.03	91.532	
6,650.00	6,593.00	6,928.51	6,784.07	14.77	16.00	-93.73	-136.52	2,740.72	2,747.66	2,716.92	30.74	89.379	
6,700.00	6,622.95	7,002.27	6,797.67	14.99	16.57	-93.22	-208.94	2,740.75	2,746.13	2,714.59	31.53	87.090	
6,750.00	6,648.92	7,064.96	6,800.41	15.25	17.12	-92.75	-271.54	2,740.78	2,744.65	2,712.31	32.34	84.861	
6,800.00	6,670.67	7,109.83	6,800.15	15.55	17.55	-92.47	-316.40	2,740.80	2,743.49	2,710.42	33.07	82.948	
6,850.00	6,688.02	7,156.60	6,799.87	15.90	18.03	-92.21	-363.18	2,740.82	2,742.68	2,708.78	33.90	80.896	
6,900.00	6,700.79	7,204.85	6,799.59	16.29	18.53	-92.01	-411.42	2,740.85	2,742.15	2,707.35	34.80	78.808	
6,950.00	6,708.87	7,254.13	6,799.31	16.71	19.09	-91.87	-460.70	2,740.87	2,741.83	2,706.04	35.79	76.612	
7,000.00	6,712.18	7,303.98	6,799.01	17.17	19.67	-91.81	-510.55	2,740.89	2,741.67	2,704.85	36.83	74.451	
7,014.75	6,712.25	7,318.72	6,798.93	17.32	19.85	-91.81	-525.30	2,740.90	2,741.66	2,704.51	37.15	73.798	
7,100.00	6,711.40	7,403.97	6,798.43	18.20	20.91	-91.82	-610.54	2,740.94	2,741.61	2,702.52	38.09	70.132	
7,200.00	6,710.41	7,503.97	6,797.85	19.34	22.24	-91.83	-710.54	2,740.98	2,741.55	2,699.99	41.56	65.967	
7,300.00	6,709.42	7,603.97	6,797.27	20.58	23.63	-91.84	-810.54	2,741.03	2,741.50	2,697.30	44.19	62.034	
7,400.00	6,708.42	7,703.97	6,796.68	21.90	25.09	-91.85	-910.54	2,741.07	2,741.44	2,694.47	46.97	58.370	
7,500.00	6,707.43	7,803.97	6,796.10	23.30	26.58	-91.85	-1,010.53	2,741.12	2,741.38	2,691.53	49.86	54.987	
7,600.00	6,706.44	7,903.97	6,795.52	24.74	28.12	-91.86	-1,110.53	2,741.16	2,741.32	2,688.48	52.84	51.880	
7,700.00	6,705.45	8,003.97	6,794.93	26.24	29.69	-91.87	-1,210.53	2,741.21	2,741.27	2,685.36	55.91	49.034	
7,800.00	6,704.45	8,103.97	6,794.35	27.78	31.29	-91.88	-1,310.53	2,741.26	2,741.21	2,682.17	59.04	46.431	
7,900.00	6,703.46	8,203.97	6,793.77	29.35	32.91	-91.89	-1,410.52	2,741.30	2,741.15	2,678.92	62.23	44.048	
8,000.00	6,702.47	8,303.97	6,793.18	30.95	34.55	-91.90	-1,510.52	2,741.35	2,741.10	2,675.63	65.47	41.867	
8,100.00	6,701.48	8,403.97	6,792.60	32.57	36.21	-91.91	-1,610.52	2,741.39	2,741.04	2,672.29	68.75	39.868	
8,200.00	6,700.49	8,503.97	6,792.02	34.22	37.89	-91.91	-1,710.52	2,741.44	2,740.98	2,668.91	72.07	38.031	
8,300.00	6,699.49	8,603.96	6,791.43	35.88	39.58	-91.92	-1,810.51	2,741.48	2,740.93	2,665.50	75.42	36.340	
8,400.00	6,698.50	8,703.96	6,790.85	37.56	41.28	-91.93	-1,910.51	2,741.53	2,740.87	2,662.07	78.80	34.782	
8,500.00	6,697.51	8,803.96	6,790.27	39.25	43.00	-91.94	-2,010.51	2,741.58	2,740.81	2,658.61	82.20	33.342	
8,600.00	6,696.52	8,903.96	6,789.68	40.95	44.72	-91.95	-2,110.50	2,741.62	2,740.76	2,655.13	85.63	32.008	
8,700.00	6,695.53	9,003.96	6,789.10	42.67	46.45	-91.96	-2,210.50	2,741.67	2,740.70	2,651.63	89.07	30.770	
8,800.00	6,694.53	9,103.96	6,788.52	44.39	48.19	-91.97	-2,310.50	2,741.71	2,740.64	2,648.12	92.53	29.620	
8,900.00	6,693.54	9,204.26	6,787.91	46.12	49.94	-91.97	-2,410.80	2,741.76	2,740.59	2,644.58	96.01	28.546	
8,954.53	6,693.00	9,258.94	6,787.25	47.07	50.89	-91.97	-2,465.47	2,741.79	2,740.55	2,642.64	97.91	27.990	
9,000.00	6,692.91	9,304.40	6,786.71	47.78	51.69	-91.96	-2,510.93	2,741.81	2,740.50	2,641.08	99.42	27.565	
9,077.45	6,694.42	9,381.81	6,785.78	48.88	53.05	-91.91	-2,588.34	2,741.85	2,740.38	2,638.50	101.88	26.898	
9,100.00	6,695.16	9,404.34	6,785.51	49.24	53.44	-91.89	-2,610.86	2,741.86	2,740.34	2,637.70	102.63	26.700	

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: Boss Hogg 15 State Com - 4H - OH - Plan #1 Draft 1													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)
9,200.00	6,898.46	9,504.24	6,784.31	50.99	55.20	-91.79	-2,710.75	2,741.91	2,740.15	2,634.00	106.14	25.815		
9,300.00	6,701.76	9,604.14	6,783.11	52.74	56.97	-91.70	-2,810.65	2,741.96	2,739.96	2,630.30	109.66	24.985		
9,400.00	6,705.05	9,704.03	6,781.92	54.50	58.73	-91.61	-2,910.54	2,742.01	2,739.79	2,626.59	113.19	24.204		
9,500.00	6,708.35	9,803.93	6,780.72	56.26	60.50	-91.51	-3,010.43	2,742.06	2,739.62	2,622.89	116.73	23.469		
9,600.00	6,711.65	9,903.83	6,779.52	58.03	62.28	-91.42	-3,110.32	2,742.11	2,739.46	2,619.18	120.28	22.776		
9,700.00	6,714.95	10,003.73	6,778.32	59.80	64.05	-91.32	-3,210.21	2,742.16	2,739.30	2,615.48	123.83	22.122		
9,800.00	6,718.25	10,103.63	6,777.12	61.58	65.83	-91.23	-3,310.10	2,742.21	2,739.16	2,611.77	127.39	21.503		
9,900.00	6,721.54	10,203.53	6,775.92	63.36	67.62	-91.14	-3,409.99	2,742.26	2,739.02	2,608.07	130.95	20.917		
10,000.00	6,724.84	10,303.43	6,774.72	65.14	69.40	-91.04	-3,509.89	2,742.31	2,738.89	2,604.37	134.52	20.361		
10,100.00	6,728.14	10,403.33	6,773.53	66.92	71.19	-90.95	-3,609.78	2,742.36	2,738.76	2,600.67	138.09	19.833		
10,200.00	6,731.44	10,503.23	6,772.33	68.71	72.98	-90.85	-3,709.67	2,742.41	2,738.65	2,596.98	141.67	19.331		
10,300.00	6,734.74	10,603.12	6,771.13	70.49	74.77	-90.76	-3,809.56	2,742.46	2,738.54	2,593.29	145.25	18.854		
10,400.00	6,738.03	10,703.02	6,769.93	72.28	76.56	-90.67	-3,909.45	2,742.51	2,738.43	2,589.60	148.84	18.399		
10,500.00	6,741.33	10,802.92	6,768.73	74.08	78.36	-90.57	-4,009.34	2,742.57	2,738.34	2,585.92	152.42	17.965		
10,600.00	6,744.63	10,902.82	6,767.53	75.87	80.15	-90.48	-4,109.24	2,742.62	2,738.25	2,582.24	156.02	17.551		
10,700.00	6,747.93	11,002.72	6,766.34	77.67	81.95	-90.38	-4,209.13	2,742.67	2,738.17	2,578.56	159.61	17.155		
10,800.00	6,751.23	11,102.62	6,765.14	79.46	83.75	-90.29	-4,309.02	2,742.72	2,738.10	2,574.89	163.21	16.777		
10,900.00	6,754.52	11,202.52	6,763.94	81.26	85.55	-90.20	-4,408.91	2,742.77	2,738.03	2,571.23	166.81	16.414		
11,000.00	6,757.82	11,302.42	6,762.74	83.06	87.35	-90.10	-4,508.80	2,742.82	2,737.98	2,567.57	170.41	16.067		
11,100.00	6,761.12	11,402.32	6,761.54	84.86	89.15	-90.01	-4,608.69	2,742.87	2,737.93	2,563.92	174.01	15.734		
11,200.00	6,764.42	11,502.21	6,760.34	86.66	90.95	-89.91	-4,708.59	2,742.92	2,737.88	2,560.27	177.62	15.415		
11,212.33	6,764.82	11,514.53	6,760.20	86.89	91.17	-89.90	-4,720.90	2,742.92	2,737.88	2,559.82	178.06	15.376 CC		
11,300.00	6,767.72	11,530.78	6,760.00	88.47	91.47	-89.89	-4,737.15	2,742.93	2,738.78	2,558.84	179.94	15.221 ES		
11,308.62	6,768.00	11,530.78	6,760.00	88.62	91.47	-89.89	-4,737.15	2,742.93	2,739.01	2,558.82	180.09	15.208 SF		

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.00 usft
Boss Hogg 15 State Com - 4H - Pilot - Plan #1												Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	19.00	0.00	0.00	85.48	216.89	2,740.56	2,749.19				
100.00	100.00	81.00	100.00	0.08	0.07	85.48	216.89	2,740.56	2,749.13	2,748.98	0.15	N/A	
200.00	200.00	181.00	200.00	0.31	0.27	85.48	216.89	2,740.56	2,749.13	2,748.55	0.58	4,777.760	
300.00	300.00	281.00	300.00	0.53	0.49	85.48	216.89	2,740.56	2,749.13	2,748.10	1.02	2,682.252	
400.00	400.00	381.00	400.00	0.76	0.72	85.48	216.89	2,740.56	2,749.13	2,747.65	1.47	1,864.492	
500.00	500.00	481.00	500.00	0.98	0.94	85.48	216.89	2,740.56	2,749.13	2,747.21	1.92	1,428.863	
600.00	600.00	581.00	600.00	1.21	1.17	85.48	216.89	2,740.56	2,749.13	2,746.76	2.37	1,158.245	
700.00	700.00	681.00	700.00	1.43	1.39	85.48	216.89	2,740.56	2,749.13	2,746.31	2.82	973.811	
800.00	800.00	781.00	800.00	1.66	1.61	85.48	216.89	2,740.56	2,749.13	2,745.86	3.27	840.046	
900.00	900.00	881.00	900.00	1.88	1.84	85.48	216.89	2,740.56	2,749.13	2,745.41	3.72	738.591	
1,000.00	1,000.00	981.00	1,000.00	2.11	2.06	85.48	216.89	2,740.56	2,749.13	2,744.96	4.17	659.002	
1,100.00	1,100.00	1,081.00	1,100.00	2.33	2.29	85.48	216.89	2,740.56	2,749.13	2,744.51	4.62	594.896	
1,200.00	1,200.00	1,181.00	1,200.00	2.56	2.51	85.48	216.89	2,740.56	2,749.13	2,744.06	5.07	542.157	
1,300.00	1,300.00	1,281.00	1,300.00	2.78	2.74	85.48	216.89	2,740.56	2,749.13	2,743.61	5.52	498.008	
1,400.00	1,400.00	1,381.00	1,400.00	3.01	2.96	85.48	216.89	2,740.56	2,749.13	2,743.16	5.97	460.507	
1,500.00	1,500.00	1,481.00	1,500.00	3.23	3.19	85.48	216.89	2,740.56	2,749.13	2,742.71	6.42	428.259	
1,600.00	1,600.00	1,581.00	1,600.00	3.46	3.41	85.48	216.89	2,740.56	2,749.13	2,742.26	6.87	400.231	
1,700.00	1,700.00	1,681.00	1,700.00	3.68	3.64	85.48	216.89	2,740.56	2,749.13	2,741.81	7.32	375.647	
1,800.00	1,800.00	1,781.00	1,800.00	3.91	3.86	85.48	216.89	2,740.56	2,749.13	2,741.36	7.77	353.908	
1,900.00	1,900.00	1,881.00	1,900.00	4.13	4.09	85.48	216.89	2,740.56	2,749.13	2,740.91	8.22	334.548	
2,000.00	2,000.00	1,981.00	2,000.00	4.35	4.31	85.48	216.89	2,740.56	2,749.13	2,740.46	8.67	317.196	
2,100.00	2,100.00	2,081.00	2,100.00	4.58	4.54	85.48	216.89	2,740.56	2,749.13	2,740.01	9.12	301.555	
2,200.00	2,200.00	2,181.00	2,200.00	4.80	4.76	85.48	216.89	2,740.56	2,749.13	2,739.56	9.57	287.384	
2,300.00	2,300.00	2,281.00	2,300.00	5.03	4.99	85.48	216.89	2,740.56	2,749.13	2,739.11	10.02	274.485	
2,400.00	2,400.00	2,381.00	2,400.00	5.25	5.21	85.48	216.89	2,740.56	2,749.13	2,738.66	10.47	262.695	
2,500.00	2,500.00	2,481.00	2,500.00	5.48	5.44	85.48	216.89	2,740.56	2,749.13	2,738.21	10.91	251.875	
2,600.00	2,600.00	2,581.00	2,600.00	5.70	5.66	85.48	216.89	2,740.56	2,749.13	2,737.76	11.36	241.912	
2,700.00	2,700.00	2,681.00	2,700.00	5.93	5.89	85.48	216.89	2,740.56	2,749.13	2,737.32	11.81	232.707	
2,800.00	2,800.00	2,781.00	2,800.00	6.15	6.11	85.48	216.89	2,740.56	2,749.13	2,736.87	12.26	224.176	
2,900.00	2,900.00	2,881.00	2,900.00	6.38	6.34	85.48	216.89	2,740.56	2,749.13	2,736.42	12.71	216.249	
3,000.00	3,000.00	2,981.00	3,000.00	6.60	6.56	85.48	216.89	2,740.56	2,749.13	2,735.97	13.16	208.864	
3,100.00	3,100.00	3,081.00	3,100.00	6.83	6.78	85.48	216.89	2,740.56	2,749.13	2,735.52	13.61	201.966	
3,200.00	3,200.00	3,181.00	3,200.00	7.05	7.01	85.48	216.89	2,740.56	2,749.13	2,735.07	14.06	195.509	
3,300.00	3,300.00	3,281.00	3,300.00	7.28	7.23	85.48	216.89	2,740.56	2,749.13	2,734.62	14.51	189.453	
3,400.00	3,400.00	3,381.00	3,400.00	7.50	7.46	85.48	216.89	2,740.56	2,749.13	2,734.17	14.96	183.760	
3,500.00	3,500.00	3,481.00	3,500.00	7.73	7.68	85.48	216.89	2,740.56	2,749.13	2,733.72	15.41	178.399	
3,600.00	3,600.00	3,581.00	3,600.00	7.95	7.91	85.48	216.89	2,740.56	2,749.13	2,733.27	15.86	173.343	
3,700.00	3,700.00	3,681.00	3,700.00	8.18	8.13	85.48	216.89	2,740.56	2,749.13	2,732.82	16.31	168.565	
3,800.00	3,800.00	3,781.00	3,800.00	8.40	8.36	85.48	216.89	2,740.56	2,749.13	2,732.37	16.76	164.043	
3,900.00	3,900.00	3,881.00	3,900.00	8.63	8.58	85.48	216.89	2,740.56	2,749.13	2,731.92	17.21	159.758	
4,000.00	4,000.00	3,981.00	4,000.00	8.85	8.81	85.48	216.89	2,740.56	2,749.13	2,731.47	17.66	155.691	
4,100.00	4,100.00	4,081.00	4,100.00	9.07	9.03	85.48	216.89	2,740.56	2,749.13	2,731.02	18.11	151.826	
4,200.00	4,200.00	4,181.00	4,200.00	9.30	9.26	85.48	216.89	2,740.56	2,749.13	2,730.57	18.56	148.148	
4,300.00	4,300.00	4,281.00	4,300.00	9.52	9.48	85.48	216.89	2,740.56	2,749.13	2,730.12	19.01	144.644	
4,400.00	4,400.00	4,381.00	4,400.00	9.75	9.71	85.48	216.89	2,740.56	2,749.13	2,729.67	19.46	141.302	
4,500.00	4,500.00	4,481.00	4,500.00	9.97	9.93	85.48	216.89	2,740.56	2,749.13	2,729.22	19.91	138.111	
4,600.00	4,600.00	4,581.00	4,600.00	10.20	10.16	85.48	216.89	2,740.56	2,749.13	2,728.77	20.35	135.060	
4,700.00	4,700.00	4,681.00	4,700.00	10.42	10.38	85.48	216.89	2,740.56	2,749.13	2,728.32	20.80	132.142	
4,800.00	4,800.00	4,781.00	4,800.00	10.65	10.61	85.48	216.89	2,740.56	2,749.13	2,727.88	21.25	129.347	
4,900.00	4,900.00	4,881.00	4,900.00	10.87	10.83	85.48	216.89	2,740.56	2,749.13	2,727.43	21.70	126.668	
5,000.00	5,000.00	4,981.00	5,000.00	11.10	11.06	85.48	216.89	2,740.56	2,749.13	2,726.98	22.15	124.098	
5,100.00	5,100.00	5,081.00	5,100.00	11.32	11.28	85.48	216.89	2,740.56	2,749.13	2,726.53	22.60	121.630	

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD-ADJ												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)					
5,200.00	5,200.00	5,181.00	5,200.00	11.55	11.50	85.48	216.89	2,740.56	2,749.13	2,726.08	23.05	119.258	
5,300.00	5,300.00	5,281.00	5,300.00	11.77	11.73	85.48	216.89	2,740.56	2,749.13	2,725.63	23.50	116.977	
5,400.00	5,400.00	5,381.00	5,400.00	12.00	11.95	85.48	216.89	2,740.56	2,749.13	2,725.18	23.95	114.781	
5,500.00	5,500.00	5,481.00	5,500.00	12.22	12.18	85.48	216.89	2,740.56	2,749.13	2,724.73	24.40	112.566	
5,600.00	5,600.00	5,581.00	5,600.00	12.45	12.40	85.48	216.89	2,740.56	2,749.13	2,724.28	24.85	110.628	
5,700.00	5,700.00	5,681.00	5,700.00	12.67	12.63	85.48	216.89	2,740.56	2,749.13	2,723.83	25.30	108.663	
5,800.00	5,800.00	5,781.00	5,800.00	12.90	12.85	85.48	216.89	2,740.56	2,749.13	2,723.38	25.75	106.766	
5,900.00	5,900.00	5,881.00	5,900.00	13.12	13.08	85.48	216.89	2,740.56	2,749.13	2,722.93	26.20	104.934	
6,000.00	6,000.00	5,981.00	6,000.00	13.35	13.30	85.48	216.89	2,740.56	2,749.13	2,722.48	26.65	103.164	
6,100.00	6,100.00	6,081.00	6,100.00	13.57	13.53	85.48	216.89	2,740.56	2,749.13	2,722.03	27.10	101.452	
6,191.40	6,191.40	6,172.40	6,191.40	13.78	13.73	85.48	216.89	2,740.56	2,749.13	2,721.62	27.51	99.937 CC	
6,200.00	6,200.00	6,181.00	6,200.00	13.79	13.75	-94.46	216.89	2,740.56	2,749.13	2,721.59	27.54	99.806 ES	
6,250.00	6,249.88	6,230.88	6,249.88	13.88	13.86	-94.50	216.89	2,740.56	2,749.39	2,721.65	27.74	99.123	
6,300.00	6,299.22	6,280.22	6,299.22	13.96	13.98	-94.59	216.89	2,740.56	2,750.03	2,722.10	27.93	98.478	
6,350.00	6,347.56	6,328.56	6,347.56	14.05	14.08	-94.73	216.89	2,740.56	2,751.10	2,722.99	28.11	97.869	
6,400.00	6,394.47	6,375.47	6,394.47	14.14	14.19	-94.90	216.89	2,740.56	2,752.64	2,724.35	28.29	97.290	
6,450.00	6,439.51	6,420.51	6,439.51	14.23	14.29	-95.07	216.89	2,740.56	2,754.73	2,726.25	28.48	96.732	
6,500.00	6,482.26	6,463.26	6,482.26	14.32	14.39	-95.23	216.89	2,740.56	2,757.45	2,728.78	28.67	96.181	
6,550.00	6,522.34	6,503.34	6,522.34	14.44	14.48	-95.35	216.89	2,740.56	2,760.89	2,732.01	28.87	95.623	
6,600.00	6,559.36	6,540.36	6,559.36	14.59	14.56	-95.40	216.89	2,740.56	2,765.13	2,736.03	29.09	95.039	
6,650.00	6,593.00	6,574.00	6,593.00	14.77	14.64	-95.35	216.89	2,740.56	2,770.26	2,740.92	29.34	94.412	
6,700.00	6,622.95	6,603.95	6,622.95	14.99	14.70	-95.17	216.89	2,740.56	2,776.37	2,746.74	29.62	93.725	
6,750.00	6,648.92	6,629.92	6,648.92	15.25	14.76	-94.84	216.89	2,740.56	2,783.50	2,753.56	29.94	92.969	
6,800.00	6,670.67	6,651.67	6,670.67	15.55	14.81	-94.34	216.89	2,740.56	2,791.70	2,761.40	30.30	92.139	
6,850.00	6,688.02	6,669.02	6,688.02	15.90	14.85	-93.64	216.89	2,740.56	2,800.99	2,770.29	30.70	91.243	
6,900.00	6,700.79	6,681.79	6,700.79	16.29	14.88	-92.73	216.89	2,740.56	2,811.35	2,780.21	31.13	90.298	
6,950.00	6,708.87	6,689.87	6,708.87	16.71	14.90	-91.61	216.89	2,740.56	2,822.74	2,791.14	31.60	89.333	
7,000.00	6,712.18	6,693.18	6,712.18	17.17	14.90	-90.28	216.89	2,740.56	2,835.08	2,803.00	32.08	88.381	
7,014.75	6,712.25	6,693.25	6,712.25	17.32	14.90	-89.85	216.89	2,740.56	2,838.89	2,806.66	32.22	88.108	
7,100.00	6,711.40	6,692.40	6,711.40	18.20	14.90	-89.83	216.89	2,740.56	2,862.28	2,829.18	33.10	86.479	
7,200.00	6,710.41	6,691.41	6,710.41	19.34	14.90	-89.81	216.89	2,740.56	2,892.69	2,858.45	34.24	84.489	
7,300.00	6,709.42	6,690.42	6,709.42	20.58	14.90	-89.79	216.89	2,740.56	2,926.20	2,890.72	35.48	82.484	
7,400.00	6,708.42	6,689.42	6,708.42	21.90	14.90	-89.77	216.89	2,740.56	2,962.71	2,925.91	36.80	80.514	
7,500.00	6,707.43	6,688.43	6,707.43	23.30	14.89	-89.75	216.89	2,740.56	3,002.10	2,963.91	38.19	78.614	
7,600.00	6,706.44	6,687.44	6,706.44	24.74	14.89	-89.73	216.89	2,740.56	3,044.27	3,004.64	39.64	76.808	
7,700.00	6,705.45	6,686.45	6,705.45	26.24	14.89	-89.70	216.89	2,740.56	3,089.11	3,047.98	41.13	75.106	
7,800.00	6,704.45	6,685.45	6,704.45	27.78	14.89	-89.68	216.89	2,740.56	3,136.49	3,093.82	42.66	73.515	
7,900.00	6,703.46	6,684.46	6,703.46	29.35	14.88	-89.66	216.89	2,740.56	3,186.30	3,142.07	44.23	72.035	
8,000.00	6,702.47	6,683.47	6,702.47	30.95	14.88	-89.64	216.89	2,740.56	3,238.44	3,192.61	45.83	70.662	
8,100.00	6,701.48	6,682.48	6,701.48	32.57	14.88	-89.62	216.89	2,740.56	3,292.79	3,245.34	47.45	69.393	
8,200.00	6,700.49	6,681.49	6,700.49	34.22	14.88	-89.60	216.89	2,740.56	3,349.25	3,300.15	49.09	68.222	
8,300.00	6,699.49	6,680.49	6,699.49	35.88	14.88	-89.58	216.89	2,740.56	3,407.70	3,356.95	50.75	67.143	
8,400.00	6,698.50	6,679.50	6,698.50	37.56	14.87	-89.56	216.89	2,740.56	3,468.05	3,415.62	52.43	66.148	
8,500.00	6,697.51	6,678.51	6,697.51	39.25	14.87	-89.54	216.89	2,740.56	3,530.20	3,476.09	54.12	65.232	
8,600.00	6,696.52	6,677.52	6,696.52	40.95	14.87	-89.52	216.89	2,740.56	3,594.07	3,538.25	55.82	64.388	
8,700.00	6,695.53	6,676.53	6,695.53	42.67	14.87	-89.50	216.89	2,740.56	3,659.55	3,602.01	57.53	63.611	
8,800.00	6,694.53	6,675.53	6,694.53	44.39	14.86	-89.48	216.89	2,740.56	3,726.56	3,667.31	59.25	62.894	
8,900.00	6,693.54	6,674.54	6,693.54	46.12	14.86	-89.46	216.89	2,740.56	3,795.02	3,734.04	60.98	62.234	
8,954.53	6,693.00	6,674.00	6,693.00	47.07	14.86	-89.44	216.89	2,740.56	3,832.94	3,771.01	61.93	61.895	
9,000.00	6,692.91	6,673.91	6,692.91	47.78	14.86	-90.34	216.89	2,740.56	3,864.86	3,802.22	62.64	61.698	
9,077.45	6,694.42	6,675.42	6,694.42	48.88	14.86	-91.93	216.89	2,740.56	3,919.85	3,856.14	63.71	61.524	
9,100.00	6,695.16	6,676.16	6,695.16	49.24	14.87	-91.95	216.89	2,740.56	3,935.99	3,871.92	64.07	61.431	

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H:
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Offset Design: Boss Hogg 15 State Com - 4H - Pilot - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E-W (usft)					
9,200.00	6,698.46	6,679.46	6,698.46	50.99	14.87	-92.02	216.89	2,740.56	4,008.34	3,942.52	65.82	60.894	
9,300.00	6,701.76	6,682.76	6,701.76	52.74	14.88	-92.09	216.89	2,740.56	4,081.86	4,014.27	67.58	60.398	
9,400.00	6,705.05	6,686.05	6,705.05	54.50	14.89	-92.15	216.89	2,740.56	4,156.47	4,087.13	69.35	59.938	
9,500.00	6,708.35	6,689.35	6,708.35	56.26	14.89	-92.22	216.89	2,740.56	4,232.14	4,161.02	71.11	59.513	
9,600.00	6,711.65	6,692.65	6,711.65	58.03	14.90	-92.29	216.89	2,740.56	4,308.79	4,235.90	72.88	59.118	
9,700.00	6,714.95	6,695.95	6,714.95	59.80	14.91	-92.36	216.89	2,740.56	4,386.38	4,311.72	74.66	58.752	
9,800.00	6,718.25	6,699.25	6,718.25	61.58	14.92	-92.43	216.89	2,740.56	4,464.86	4,388.42	76.44	58.413	
9,900.00	6,721.54	6,702.54	6,721.54	63.36	14.92	-92.50	216.89	2,740.56	4,544.18	4,465.96	78.22	58.097	
10,000.00	6,724.84	6,705.84	6,724.84	65.14	14.93	-92.57	216.89	2,740.56	4,624.30	4,544.30	80.00	57.804	
10,100.00	6,728.14	6,709.14	6,728.14	66.92	14.94	-92.64	216.89	2,740.56	4,705.18	4,623.39	81.79	57.531	
10,200.00	6,731.44	6,712.44	6,731.44	68.71	14.95	-92.70	216.89	2,740.56	4,786.78	4,703.21	83.57	57.277	
10,300.00	6,734.74	6,715.74	6,734.74	70.49	14.95	-92.77	216.89	2,740.56	4,869.06	4,783.70	85.36	57.040	
10,400.00	6,738.03	6,719.03	6,738.03	72.28	14.96	-92.84	216.89	2,740.56	4,952.00	4,864.84	87.15	56.819	
10,500.00	6,741.33	6,722.33	6,741.33	74.08	14.97	-92.91	216.89	2,740.56	5,035.55	4,946.60	88.95	56.613	
10,600.00	6,744.63	6,725.63	6,744.63	75.87	14.98	-92.98	216.89	2,740.56	5,119.69	5,028.95	90.74	56.421	
10,700.00	6,747.93	6,728.93	6,747.93	77.67	14.98	-93.05	216.89	2,740.56	5,204.39	5,111.85	92.54	56.241	
10,800.00	6,751.23	6,732.23	6,751.23	79.46	14.99	-93.12	216.89	2,740.56	5,289.62	5,195.28	94.33	56.073	
10,900.00	6,754.52	6,735.52	6,754.52	81.26	15.00	-93.19	216.89	2,740.56	5,375.36	5,279.22	96.13	55.916	
11,000.00	6,757.82	6,738.82	6,757.82	83.06	15.01	-93.25	216.89	2,740.56	5,461.58	5,363.65	97.93	55.770	
11,100.00	6,761.12	6,742.12	6,761.12	84.86	15.01	-93.32	216.89	2,740.56	5,548.26	5,448.53	99.73	55.632	
11,200.00	6,764.42	6,745.42	6,764.42	86.66	15.02	-93.39	216.89	2,740.56	5,635.38	5,533.85	101.53	55.503	
11,300.00	6,767.72	6,748.72	6,767.72	88.47	15.03	-93.46	216.89	2,740.56	5,722.92	5,619.59	103.33	55.383	
11,308.62	6,768.00	6,749.00	6,768.00	88.62	15.03	-93.47	216.89	2,740.56	5,730.48	5,627.00	103.49	55.373 SF	

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H:
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 115' State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00'usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00'usft	Output errors are at	2.00'sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GE 3318' + KB 25' @ 3343.00usft

Offset Depths are relative to Offset Datum

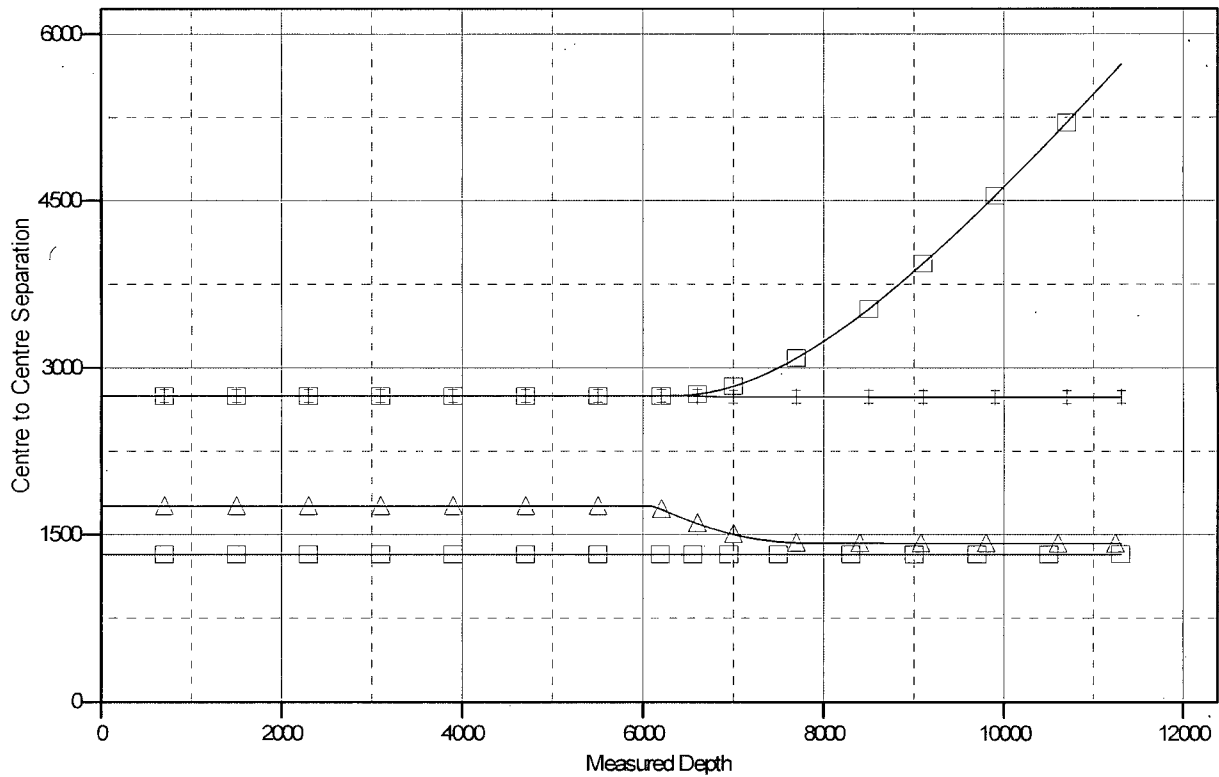
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 2H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.03°

Ladder Plot



LEGEND

- 1H, OH, Plan #1 Draft 1 V0
- 3H, OH, Plan #1 Draft 1 V0
- 4H, OH, Plan #1 Draft 1 V0
- 4H, Pilot, Plan #1 V0

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

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 2H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3318' + KB 25' @ 3343.00usft
Reference Site:	Boss Hogg 15 State Com	MD Reference:	GE 3318' + KB 25' @ 3343.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GE 3318' + KB 25' @ 3343.00usft

Offset Depths are relative to Offset Datum

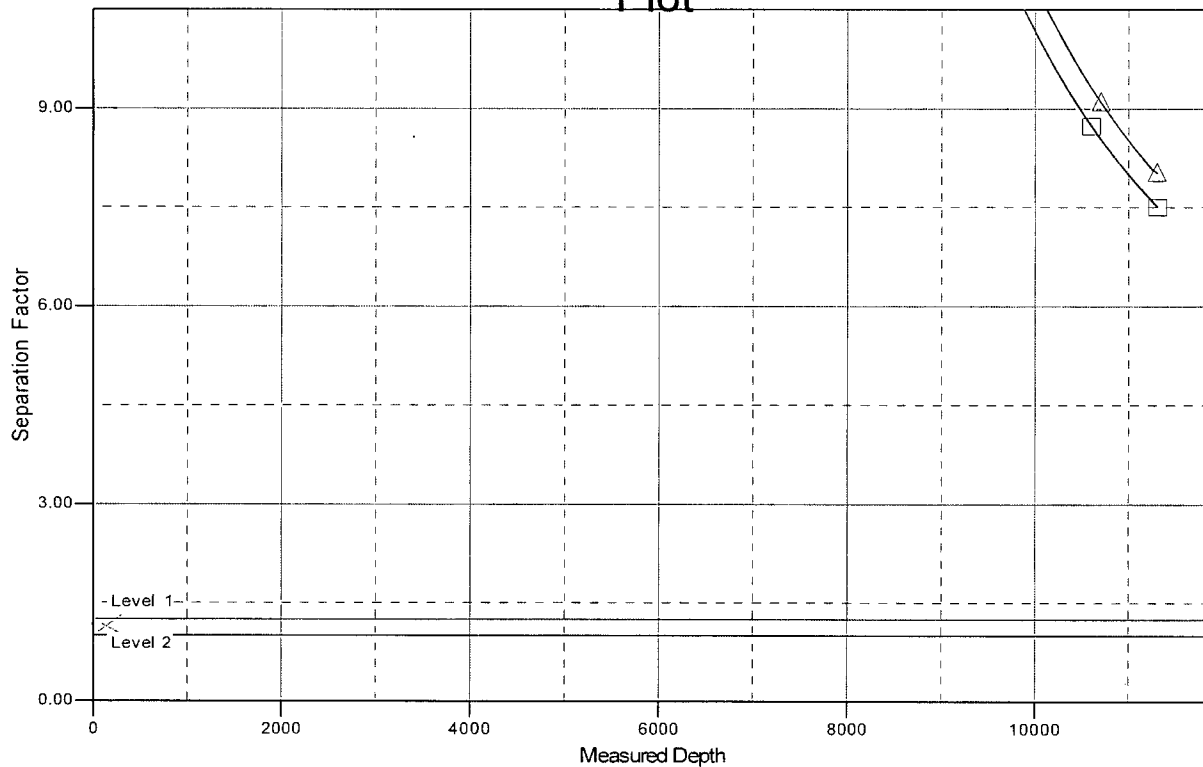
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 2H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.03°

Separation Factor Plot



LEGEND

- 1H, OH, Plan #1 Draft 1 V0
- △ 3H, OH, Plan #1 Draft 1 V0
- ✦ 4H, OH, Plan #1 Draft 1 V0
- ⊠ 4H, Pilot, Plan #1 V0

MD	INC	AZI	TVD	NS	EW	DLS	BUILD	TURN	VSECT
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
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	0.00
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	0.00
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00	0.00
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	0.00
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00	0.00
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	0.00
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	0.00	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00	0.00
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	0.00
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	0.00
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00	0.00
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	0.00	0.00
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	0.00
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	0.00
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	0.00
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	0.00
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	0.00
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00	0.00
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	0.00
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	0.00
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00	0.00
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	0.00	0.00
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	0.00
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	0.00	0.00	0.00
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	0.00	0.00	0.00
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00	0.00
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00	0.00
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	0.00

4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	0.00	0.00	0.00
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	0.00	0.00	0.00
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	0.00	0.00	0.00
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	0.00	0.00
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	0.00
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	0.00	0.00	0.00
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	0.00	0.00
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	0.00	0.00
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	0.00
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.00	0.00
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	0.00
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	0.00	0.00
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	0.00	0.00
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	0.00	0.00
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	0.00	0.00	0.00
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	0.00	0.00	0.00
6191.40	0.00	0.00	6191.40	0.00	0.00	0.00	0.00	0.00	0.00
6200.00	0.95	179.93	6200.00	-0.07	0.00	11.00	11.00	0.00	0.07
6250.00	6.45	179.93	6249.88	-3.29	0.00	11.00	11.00	0.00	3.29
6300.00	11.95	179.93	6299.21	-11.28	0.01	11.00	11.00	0.00	11.28
6350.00	17.45	179.93	6347.56	-23.96	0.03	11.00	11.00	0.00	23.96
6400.00	22.95	179.93	6394.47	-41.22	0.05	11.00	11.00	0.00	41.22
6450.00	28.45	179.93	6439.51	-62.89	0.07	11.00	11.00	0.00	62.89
6500.00	33.95	179.93	6482.26	-88.77	0.10	11.00	11.00	0.00	88.78
6550.00	39.45	179.93	6522.34	-118.64	0.14	11.00	11.00	0.00	118.64
6600.00	44.95	179.93	6559.36	-152.21	0.18	11.00	11.00	0.00	152.21
6650.00	50.45	179.93	6593.00	-189.18	0.22	11.00	11.00	0.00	189.18
6700.00	55.95	179.93	6622.95	-229.20	0.27	11.00	11.00	0.00	229.20
6750.00	61.45	179.93	6648.92	-271.90	0.32	11.00	11.00	0.00	271.90
6800.00	66.95	179.93	6670.67	-316.90	0.37	11.00	11.00	0.00	316.90
6850.00	72.45	179.93	6688.02	-363.77	0.42	11.00	11.00	0.00	363.77
6900.00	77.95	179.93	6700.79	-412.10	0.48	11.00	11.00	0.00	412.10
6950.00	83.45	179.93	6708.87	-461.42	0.53	11.00	11.00	0.00	461.42
7000.00	88.95	179.93	6712.18	-511.29	0.59	11.00	11.00	0.00	511.29
7014.75	90.57	179.93	6712.25	-526.04	0.61	11.00	11.00	0.00	526.04
7100.00	90.57	179.93	6711.40	-611.28	0.71	0.00	0.00	0.00	611.28
7200.00	90.57	179.93	6710.41	-711.28	0.82	0.00	0.00	0.00	711.28
7300.00	90.57	179.93	6709.42	-811.27	0.94	0.00	0.00	0.00	811.27
7400.00	90.57	179.93	6708.42	-911.27	1.06	0.00	0.00	0.00	911.27
7500.00	90.57	179.93	6707.43	-1011.26	1.17	0.00	0.00	0.00	1011.26
7600.00	90.57	179.93	6706.44	-1111.26	1.29	0.00	0.00	0.00	1111.26
7700.00	90.57	179.93	6705.45	-1211.25	1.40	0.00	0.00	0.00	1211.26
7800.00	90.57	179.93	6704.45	-1311.25	1.52	0.00	0.00	0.00	1311.25
7900.00	90.57	179.93	6703.46	-1411.24	1.64	0.00	0.00	0.00	1411.25
8000.00	90.57	179.93	6702.47	-1511.24	1.75	0.00	0.00	0.00	1511.24
8100.00	90.57	179.93	6701.48	-1611.23	1.87	0.00	0.00	0.00	1611.24
8200.00	90.57	179.93	6700.49	-1711.23	1.98	0.00	0.00	0.00	1711.23

8300.00	90.57	179.93	6699.49	-1811.22	2.10	0.00	0.00	0.00	1811.23
8400.00	90.57	179.93	6698.50	-1911.22	2.22	0.00	0.00	0.00	1911.22
8500.00	90.57	179.93	6697.51	-2011.21	2.33	0.00	0.00	0.00	2011.22
8600.00	90.57	179.93	6696.52	-2111.21	2.45	0.00	0.00	0.00	2111.21
8700.00	90.57	179.93	6695.53	-2211.20	2.56	0.00	0.00	0.00	2211.21
8800.00	90.57	179.93	6694.53	-2311.20	2.68	0.00	0.00	0.00	2311.20
8900.00	90.57	179.93	6693.54	-2411.19	2.79	0.00	0.00	0.00	2411.20
8954.53	90.57	179.93	6693.00	-2465.72	2.86	0.00	0.00	0.00	2465.72
9000.00	89.66	179.94	6692.91	-2511.19	2.91	2.00	-2.00	0.01	2511.19
9077.45	88.11	179.94	6694.42	-2588.63	2.99	2.00	-2.00	0.01	2588.63
9100.00	88.11	179.94	6695.16	-2611.16	3.01	0.00	0.00	0.00	2611.16
9200.00	88.11	179.94	6698.46	-2711.11	3.11	0.00	0.00	0.00	2711.11
9300.00	88.11	179.94	6701.76	-2811.05	3.20	0.00	0.00	0.00	2811.05
9400.00	88.11	179.94	6705.05	-2911.00	3.30	0.00	0.00	0.00	2911.00
9500.00	88.11	179.94	6708.35	-3010.94	3.40	0.00	0.00	0.00	3010.95
9600.00	88.11	179.94	6711.65	-3110.89	3.49	0.00	0.00	0.00	3110.89
9700.00	88.11	179.94	6714.95	-3210.84	3.59	0.00	0.00	0.00	3210.84
9800.00	88.11	179.94	6718.25	-3310.78	3.69	0.00	0.00	0.00	3310.78
9900.00	88.11	179.94	6721.54	-3410.73	3.78	0.00	0.00	0.00	3410.73
10000.00	88.11	179.94	6724.84	-3510.67	3.88	0.00	0.00	0.00	3510.67
10100.00	88.11	179.94	6728.14	-3610.62	3.98	0.00	0.00	0.00	3610.62
10200.00	88.11	179.94	6731.44	-3710.56	4.07	0.00	0.00	0.00	3710.57
10300.00	88.11	179.94	6734.74	-3810.51	4.17	0.00	0.00	0.00	3810.51
10400.00	88.11	179.94	6738.03	-3910.45	4.27	0.00	0.00	0.00	3910.46
10500.00	88.11	179.94	6741.33	-4010.40	4.36	0.00	0.00	0.00	4010.40
10600.00	88.11	179.94	6744.63	-4110.35	4.46	0.00	0.00	0.00	4110.35
10700.00	88.11	179.94	6747.93	-4210.29	4.56	0.00	0.00	0.00	4210.29
10800.00	88.11	179.94	6751.23	-4310.24	4.65	0.00	0.00	0.00	4310.24
10900.00	88.11	179.94	6754.52	-4410.18	4.75	0.00	0.00	0.00	4410.18
11000.00	88.11	179.94	6757.82	-4510.13	4.85	0.00	0.00	0.00	4510.13
11100.00	88.11	179.94	6761.12	-4610.07	4.94	0.00	0.00	0.00	4610.08
11200.00	88.11	179.94	6764.42	-4710.02	5.04	0.00	0.00	0.00	4710.02
11308.62	88.11	179.94	6768.00	-4818.58	5.14	0.00	0.00	0.00	4818.58