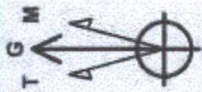
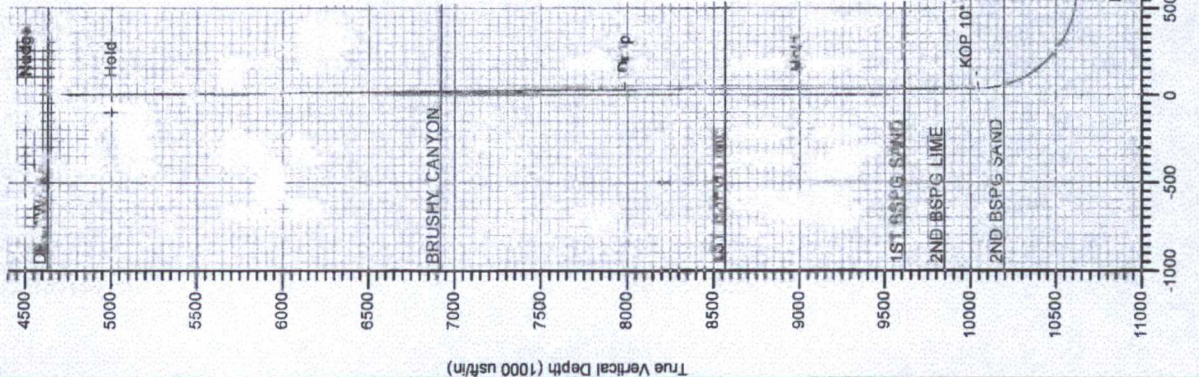


Project: Lea County, NM (NAD-83)
Site: Chincoteague 32 State Com
Well: 3H
Wellbore: OH
Design: Prelim 1



Azimuths to Grid North
True North: -0.34°
Magnetic North: 6.93°
Magnetic Field
Strength: 48112.0snT
Dip Angle: 60.05°
Date: 1/11/2016
Model: BGGM2015



DESIGN TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Northing
SHL (C32SC 3H)	0.00	0.00	0.00	425146.72
PBHL (C32SC 3H)	10660.00	4741.99	-833.38	429888.71

SECTION DETAILS				
MD	Inc	Azi	+N/-S	+E/-W
0.00	0.00	0.00	0.00	0.00
4500.00	0.00	0.00	0.00	0.00
5000.00	5.00	270.00	0.00	0.00
5500.00	5.00	270.00	-21.60	0.00
6000.00	5.00	270.00	-283.27	0.00
6500.00	5.00	270.00	-283.27	0.00
7000.00	5.00	270.00	-326.68	0.00
7500.00	5.00	270.00	-326.68	0.00
8000.00	5.00	270.00	-326.68	0.00
8500.00	5.00	270.00	-326.68	0.00
9000.00	5.00	270.00	-326.68	0.00
9500.00	5.00	270.00	-326.68	0.00
10000.00	5.00	270.00	-326.68	0.00
10500.00	5.00	270.00	-326.68	0.00
11000.00	5.00	270.00	-326.68	0.00
11500.00	5.00	270.00	-326.68	0.00
12000.00	5.00	270.00	-326.68	0.00
12500.00	5.00	270.00	-326.68	0.00
13000.00	5.00	270.00	-326.68	0.00
13500.00	5.00	270.00	-326.68	0.00
14000.00	5.00	270.00	-326.68	0.00
14500.00	5.00	270.00	-326.68	0.00
15000.00	5.00	270.00	-326.68	0.00
15500.00	5.00	270.00	-326.68	0.00
16000.00	5.00	270.00	-326.68	0.00
16500.00	5.00	270.00	-326.68	0.00
17000.00	5.00	270.00	-326.68	0.00
17500.00	5.00	270.00	-326.68	0.00
18000.00	5.00	270.00	-326.68	0.00
18500.00	5.00	270.00	-326.68	0.00
19000.00	5.00	270.00	-326.68	0.00
19500.00	5.00	270.00	-326.68	0.00
20000.00	5.00	270.00	-326.68	0.00
20500.00	5.00	270.00	-326.68	0.00
21000.00	5.00	270.00	-326.68	0.00
21500.00	5.00	270.00	-326.68	0.00
22000.00	5.00	270.00	-326.68	0.00
22500.00	5.00	270.00	-326.68	0.00
23000.00	5.00	270.00	-326.68	0.00
23500.00	5.00	270.00	-326.68	0.00
24000.00	5.00	270.00	-326.68	0.00
24500.00	5.00	270.00	-326.68	0.00
25000.00	5.00	270.00	-326.68	0.00
25500.00	5.00	270.00	-326.68	0.00
26000.00	5.00	270.00	-326.68	0.00
26500.00	5.00	270.00	-326.68	0.00
27000.00	5.00	270.00	-326.68	0.00
27500.00	5.00	270.00	-326.68	0.00
28000.00	5.00	270.00	-326.68	0.00
28500.00	5.00	270.00	-326.68	0.00
29000.00	5.00	270.00	-326.68	0.00
29500.00	5.00	270.00	-326.68	0.00
30000.00	5.00	270.00	-326.68	0.00
30500.00	5.00	270.00	-326.68	0.00
31000.00	5.00	270.00	-326.68	0.00
31500.00	5.00	270.00	-326.68	0.00
32000.00	5.00	270.00	-326.68	0.00
32500.00	5.00	270.00	-326.68	0.00
33000.00	5.00	270.00	-326.68	0.00
33500.00	5.00	270.00	-326.68	0.00
34000.00	5.00	270.00	-326.68	0.00
34500.00	5.00	270.00	-326.68	0.00
35000.00	5.00	270.00	-326.68	0.00
35500.00	5.00	270.00	-326.68	0.00
36000.00	5.00	270.00	-326.68	0.00
36500.00	5.00	270.00	-326.68	0.00
37000.00	5.00	270.00	-326.68	0.00
37500.00	5.00	270.00	-326.68	0.00
38000.00	5.00	270.00	-326.68	0.00
38500.00	5.00	270.00	-326.68	0.00
39000.00	5.00	270.00	-326.68	0.00
39500.00	5.00	270.00	-326.68	0.00
40000.00	5.00	270.00	-326.68	0.00
40500.00	5.00	270.00	-326.68	0.00
41000.00	5.00	270.00	-326.68	0.00
41500.00	5.00	270.00	-326.68	0.00
42000.00	5.00	270.00	-326.68	0.00
42500.00	5.00	270.00	-326.68	0.00
43000.00	5.00	270.00	-326.68	0.00
43500.00	5.00	270.00	-326.68	0.00
44000.00	5.00	270.00	-326.68	0.00
44500.00	5.00	270.00	-326.68	0.00
45000.00	5.00	270.00	-326.68	0.00
45500.00	5.00	270.00	-326.68	0.00
46000.00	5.00	270.00	-326.68	0.00
46500.00	5.00	270.00	-326.68	0.00
47000.00	5.00	270.00	-326.68	0.00
47500.00	5.00	270.00	-326.68	0.00
48000.00	5.00	270.00	-326.68	0.00
48500.00	5.00	270.00	-326.68	0.00
49000.00	5.00	270.00	-326.68	0.00
49500.00	5.00	270.00	-326.68	0.00
50000.00	5.00	270.00	-326.68	0.00
50500.00	5.00	270.00	-326.68	0.00
51000.00	5.00	270.00	-326.68	0.00
51500.00	5.00	270.00	-326.68	0.00
52000.00	5.00	270.00	-326.68	0.00
52500.00	5.00	270.00	-326.68	0.00
53000.00	5.00	270.00	-326.68	0.00
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54500.00	5.00	270.00	-326.68	0.00
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55500.00	5.00	270.00	-326.68	0.00
56000.00	5.00	270.00	-326.68	0.00
56500.00	5.00	270.00	-326.68	0.00
57000.00	5.00	270.00	-326.68	0.00
57500.00	5.00	270.00	-326.68	0.00
58000.00	5.00	270.00	-326.68	0.00
58500.00	5.00	270.00	-326.68	0.00
59000.00	5.00	270.00	-326.68	0.00
59500.00	5.00	270.00	-326.68	0.00
60000.00	5.00	270.00	-326.68	0.00
60500.00	5.00	270.00	-326.68	0.00
61000.00	5.00	270.00	-326.68	0.00
61500.00	5.00	270.00	-326.68	0.00
62000.00	5.00	270.00	-326.68	0.00
62500.00	5.00	270.00	-326.68	0.00
63000.00	5.00	270.00	-326.68	0.00
63500.00	5.00	270.00	-326.68	0.00
64000.00	5.00	270.00	-326.68	0.00
64500.00	5.00	270.00	-326.68	0.00
65000.00	5.00	270.00	-326.68	0.00
65500.00	5.00	270.00	-326.68	0.00
66000.00	5.00	270.00	-326.68	0.00
66500.00	5.00	270.00	-326.68	0.00
67000.00	5.00	270.00	-326.68	0.00
67500.00	5.00	270.00	-326.68	0.00
68000.00	5.00	270.00	-326.68	0.00
68500.00	5.00	270.00	-326.68	0.00
69000.00	5.00	270.00	-326.68	0.00
69500.00	5.00	270.00	-326.68	0.00
70000.00	5.00	270.00	-326.68	0.00
70500.00	5.00	270.00	-326.68	0.00
71000.00	5.00	270.00	-326.68	0.00
71500.00	5.00	270.00	-326.68	0.00
72000.00	5.00	270.00	-326.68	0.00
72500.00	5.00	270.00	-326.68	0.00
73000.00	5.00	270.00	-326.68	0.00
73500.00	5.00	270.00	-326.68	0.00
74000.00	5.00	270.00	-326.68	0.00
74500.00	5.00	270.00	-326.68	0.00
75000.00	5.00	270.00	-326.68	0.00
75500.00	5.00	270.00	-326.68	0.00
76000.00	5.00	270.00	-326.68	0.00
76500.00	5.00	270.00	-326.68	0.00
77000.00	5.00	270.00	-326.68	0.00
77500.00	5.00	270.00	-326.68	0.00
78000.00	5.00	270.00	-326.68	0.00
78500.00	5.00	270.00	-326.68	0.00
79000.00	5.00	270.00	-326.68	0.00
79500.00	5.00	270.00	-326.68	0.00
80000.00	5.00	270.00	-326.68	0.00
80500.00	5.00	270.00	-326.68	0.00
81000.00	5.00	270.00	-326.68	0.00
81500.00	5.00	270.00	-326.68	0.00
82000.00	5.00	270.00	-326.68	0.00
82500.00	5.00	270.00	-326.68	0.00
83000.00	5.00	270.00	-326.68	0.00
83500.00	5.00	270.00	-326.68	0.00
84000.00	5.00	270.00	-326.68	0.00
84500.00	5.00	270.00	-326.68	0.00
85000.00	5.00	270.00	-326.68	0.00
85500.00	5.00	270.00	-326.68	0.00
86000.00	5.00	270.00	-326.68	0.00
86500.00	5.00	270.00	-326.68	0.00
87000.00	5.00	270.00	-326.68	0.00
87500.00	5.00	270.00	-326.68	0.00
88000.00	5.00	270.00	-326.68	0.00
88500.00	5.00	270.00	-326.68	0.00
89000.00	5.00	270.00	-326.68	0.00
89500.00	5.00	270.00	-326.68	0.00
90000.00	5.00	270.00	-326.68	0.00
90500.00	5.00	270.00	-326.68	0.00
91000.00	5.00	270.00	-326.68	0.00
91500.00	5.00	270.00	-326.68	0.00
92000.00	5.00	270.00	-326.68	0.00
92500.00	5.00	270.00	-326.68	0.00
93000.00	5.00	270.00	-326.68	0.00
93500.00	5.00	270.00	-326.68	0.00
94000.00	5.00	270.00	-326.68	0.00
94500.00	5.00	270.00	-326.68	0.00
95000.00	5.00	270.00	-326.68	0.00
95500.00	5.00	270.00	-326.68	0.00
96000.00	5.00	270.00	-326.68	0.00
96500.00	5.00	270.00	-326.68	0.00
97000.00	5.00	270.00	-326.68	0.00
97500.00	5.00	270.00	-326.68	0.00
98000.00	5.00	270.00	-326.68	0.00
98500.00	5.00	270.00	-326.68	0.00
99000.00	5.00	270.00	-326.68	0.00
99500.00	5.00	270.00	-326.68	0.00
100000.00	5.00	270.00	-326.68	0.00

HOBBS OCD
JAN 14 2016
RECEIVED

PROJECT DETAILS:	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

FORMATION TOP DETAILS	
TVDPath	MDPath
745.00	745.00
1045.00	1045.00
4385.00	4385.00
4630.00	4630.01
6920.00	6927.97
8565.00	8578.22
9815.00	9828.32
9845.00	9858.32
10195.00	10210.01



DEVON ENERGY

Lea County, NM (NAD-83)
Chincoteague 32 State Com
3H

OH

Plan: Prelim 1

Standard Planning Report

11 January, 2016

LEAM
Drilling Systems LLC

**LEAM Drilling Systems LLC**

Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Chincoteague 32 State Com
Well: 3H
Wellbore: OH
Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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

Site	Chincoteague 32 State Com				
Site Position:		Northing:	425,129.39 usft	Latitude:	32° 10' 1.867 N
From:	Map	Easting:	736,582.94 usft	Longitude:	103° 42' 8.435 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well	3H					
Well Position	+N/-S	17.33 usft	Northing:	425,146.72 usft	Latitude:	32° 10' 1.937 N
	+E/-W	1,749.53 usft	Easting:	738,332.47 usft	Longitude:	103° 41' 48.080 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,494.70 usft	Ground Level:	3,471.20 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	1/11/2016	7.27	60.05	48,112

Design	Prelim 1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	353.90

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	5.00	270.00	4,999.37	0.00	-21.80	1.00	1.00	0.00	270.00	
8,000.00	5.00	270.00	7,987.95	0.00	-283.27	0.00	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,986.68	0.00	-326.88	0.50	-0.50	0.00	180.00	
10,060.39	0.00	0.00	10,047.07	0.00	-326.88	0.00	0.00	0.00	0.00	
10,954.94	89.45	353.90	10,620.00	564.29	-387.15	10.00	10.00	-0.68	353.90	
15,156.59	89.45	353.90	10,660.00	4,741.99	-833.38	0.00	0.00	0.00	0.00	PBHL (C32SC 3H)



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Chincoteague 32 State Com
Well: 3H
Wellbore: OH
Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (C32SC 3H)									
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
745.00	0.00	0.00	745.00	0.00	0.00	0.00	0.00	0.00	0.00
RUSTLER									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,045.00	0.00	0.00	1,045.00	0.00	0.00	0.00	0.00	0.00	0.00
SALT									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,385.00	0.00	0.00	4,385.00	0.00	0.00	0.00	0.00	0.00	0.00
BASE SALT									
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Nudge									



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Design: Prelim 1

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North Reference: Grid
Survey Calculation Method: Minimum Curvature

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	1.00	270.00	4,600.00	0.00	-0.87	0.09	1.00	1.00	0.00
4,630.01	1.30	270.00	4,630.00	0.00	-1.47	0.16	1.00	1.00	0.00
DELAWARE									
4,700.00	2.00	270.00	4,699.96	0.00	-3.49	0.37	1.00	1.00	0.00
4,800.00	3.00	270.00	4,799.86	0.00	-7.85	0.83	1.00	1.00	0.00
4,900.00	4.00	270.00	4,899.68	0.00	-13.96	1.48	1.00	1.00	0.00
5,000.00	5.00	270.00	4,999.37	0.00	-21.80	2.32	1.00	1.00	0.00
Hold									
5,100.00	5.00	270.00	5,098.99	0.00	-30.52	3.24	0.00	0.00	0.00
5,200.00	5.00	270.00	5,198.80	0.00	-39.23	4.17	0.00	0.00	0.00
5,300.00	5.00	270.00	5,298.22	0.00	-47.95	5.10	0.00	0.00	0.00
5,400.00	5.00	270.00	5,397.84	0.00	-56.67	6.02	0.00	0.00	0.00
5,500.00	5.00	270.00	5,497.46	0.00	-65.38	6.95	0.00	0.00	0.00
5,600.00	5.00	270.00	5,597.08	0.00	-74.10	7.87	0.00	0.00	0.00
5,700.00	5.00	270.00	5,696.70	0.00	-82.81	8.80	0.00	0.00	0.00
5,800.00	5.00	270.00	5,796.32	0.00	-91.53	9.73	0.00	0.00	0.00
5,900.00	5.00	270.00	5,895.94	0.00	-100.24	10.65	0.00	0.00	0.00
6,000.00	5.00	270.00	5,995.56	0.00	-108.96	11.58	0.00	0.00	0.00
6,100.00	5.00	270.00	6,095.18	0.00	-117.67	12.50	0.00	0.00	0.00
6,200.00	5.00	270.00	6,194.80	0.00	-126.39	13.43	0.00	0.00	0.00
6,300.00	5.00	270.00	6,294.42	0.00	-135.11	14.36	0.00	0.00	0.00
6,400.00	5.00	270.00	6,394.04	0.00	-143.82	15.28	0.00	0.00	0.00
6,500.00	5.00	270.00	6,493.66	0.00	-152.54	16.21	0.00	0.00	0.00
6,600.00	5.00	270.00	6,593.28	0.00	-161.25	17.14	0.00	0.00	0.00
6,700.00	5.00	270.00	6,692.90	0.00	-169.97	18.06	0.00	0.00	0.00
6,800.00	5.00	270.00	6,792.52	0.00	-178.68	18.99	0.00	0.00	0.00
6,900.00	5.00	270.00	6,892.14	0.00	-187.40	19.91	0.00	0.00	0.00
6,927.97	5.00	270.00	6,920.00	0.00	-189.84	20.17	0.00	0.00	0.00
BRUSHY CANYON									
7,000.00	5.00	270.00	6,991.76	0.00	-196.11	20.84	0.00	0.00	0.00
7,100.00	5.00	270.00	7,091.37	0.00	-204.83	21.77	0.00	0.00	0.00
7,200.00	5.00	270.00	7,190.99	0.00	-213.55	22.69	0.00	0.00	0.00
7,300.00	5.00	270.00	7,290.61	0.00	-222.26	23.62	0.00	0.00	0.00
7,400.00	5.00	270.00	7,390.23	0.00	-230.98	24.54	0.00	0.00	0.00
7,500.00	5.00	270.00	7,489.85	0.00	-239.69	25.47	0.00	0.00	0.00
7,600.00	5.00	270.00	7,589.47	0.00	-248.41	26.40	0.00	0.00	0.00
7,700.00	5.00	270.00	7,689.09	0.00	-257.12	27.32	0.00	0.00	0.00
7,800.00	5.00	270.00	7,788.71	0.00	-265.84	28.25	0.00	0.00	0.00
7,900.00	5.00	270.00	7,888.33	0.00	-274.55	29.18	0.00	0.00	0.00
8,000.00	5.00	270.00	7,987.95	0.00	-283.27	30.10	0.00	0.00	0.00
Drop									
8,100.00	4.50	270.00	8,087.61	0.00	-291.55	30.98	0.50	-0.50	0.00
8,200.00	4.00	270.00	8,187.33	0.00	-298.96	31.77	0.50	-0.50	0.00
8,300.00	3.50	270.00	8,287.12	0.00	-305.50	32.46	0.50	-0.50	0.00
8,400.00	3.00	270.00	8,386.96	0.00	-311.17	33.07	0.50	-0.50	0.00
8,500.00	2.50	270.00	8,486.84	0.00	-315.97	33.58	0.50	-0.50	0.00
8,578.22	2.11	270.00	8,565.00	0.00	-319.11	33.91	0.50	-0.50	0.00
1ST BSPG LIME									
8,600.00	2.00	270.00	8,586.76	0.00	-319.89	33.99	0.50	-0.50	0.00
8,700.00	1.50	270.00	8,686.72	0.00	-322.95	34.32	0.50	-0.50	0.00
8,800.00	1.00	270.00	8,786.69	0.00	-325.13	34.55	0.50	-0.50	0.00
8,900.00	0.50	270.00	8,886.68	0.00	-326.44	34.69	0.50	-0.50	0.00
9,000.00	0.00	0.00	8,986.68	0.00	-326.88	34.74	0.50	-0.50	0.00



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North Reference: Grid
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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)
Hold									
9,100.00	0.00	0.00	9,086.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,200.00	0.00	0.00	9,186.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,300.00	0.00	0.00	9,286.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,400.00	0.00	0.00	9,386.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,500.00	0.00	0.00	9,486.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,600.00	0.00	0.00	9,586.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,628.32	0.00	0.00	9,615.00	0.00	-326.88	34.74	0.00	0.00	0.00
1ST BSPG SAND									
9,700.00	0.00	0.00	9,686.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,800.00	0.00	0.00	9,786.68	0.00	-326.88	34.74	0.00	0.00	0.00
9,858.32	0.00	0.00	9,845.00	0.00	-326.88	34.74	0.00	0.00	0.00
2ND BSPG LIME									
9,900.00	0.00	0.00	9,886.68	0.00	-326.88	34.74	0.00	0.00	0.00
10,000.00	0.00	0.00	9,986.68	0.00	-326.88	34.74	0.00	0.00	0.00
10,060.39	0.00	0.00	10,047.07	0.00	-326.88	34.74	0.00	0.00	0.00
KOP 10° DLS									
10,100.00	3.96	353.90	10,086.65	1.36	-327.02	36.10	10.00	10.00	0.00
10,150.00	8.96	353.90	10,136.32	6.95	-327.62	41.73	10.00	10.00	0.00
10,200.00	13.96	353.90	10,185.30	16.83	-328.67	51.66	10.00	10.00	0.00
10,210.01	14.96	353.90	10,195.00	19.32	-328.94	54.16	10.00	10.00	0.00
2ND BSPG SAND									
10,250.00	18.96	353.90	10,233.24	30.91	-330.18	65.82	10.00	10.00	0.00
10,300.00	23.96	353.90	10,279.76	49.10	-332.12	84.11	10.00	10.00	0.00
10,350.00	28.96	353.90	10,324.51	71.24	-334.49	106.38	10.00	10.00	0.00
10,400.00	33.96	353.90	10,367.14	97.18	-337.26	132.47	10.00	10.00	0.00
10,450.00	38.96	353.90	10,407.34	126.72	-340.41	162.18	10.00	10.00	0.00
10,500.00	43.96	353.90	10,444.80	159.63	-343.93	195.27	10.00	10.00	0.00
10,550.00	48.96	353.90	10,479.23	195.66	-347.77	231.50	10.00	10.00	0.00
10,600.00	53.96	353.90	10,510.37	234.53	-351.93	270.60	10.00	10.00	0.00
10,650.00	58.96	353.90	10,537.99	275.96	-356.35	312.26	10.00	10.00	0.00
10,700.00	63.96	353.90	10,561.87	319.62	-361.02	356.17	10.00	10.00	0.00
10,750.00	68.96	353.90	10,581.83	365.19	-365.88	402.00	10.00	10.00	0.00
10,800.00	73.96	353.90	10,597.73	412.31	-370.92	449.39	10.00	10.00	0.00
10,850.00	78.96	353.90	10,609.43	460.63	-376.08	497.98	10.00	10.00	0.00
10,900.00	83.96	353.90	10,616.85	509.78	-381.33	547.41	10.00	10.00	0.00
10,954.94	89.45	353.90	10,620.00	564.29	-387.15	602.24	10.00	10.00	0.00
LP									
11,000.00	89.45	353.90	10,620.43	609.10	-391.94	647.30	0.00	0.00	0.00
11,100.00	89.45	353.90	10,621.38	708.53	-402.56	747.30	0.00	0.00	0.00
11,200.00	89.45	353.90	10,622.34	807.96	-413.18	847.29	0.00	0.00	0.00
11,300.00	89.45	353.90	10,623.29	907.39	-423.80	947.29	0.00	0.00	0.00
11,400.00	89.45	353.90	10,624.24	1,006.82	-434.42	1,047.28	0.00	0.00	0.00
11,500.00	89.45	353.90	10,625.19	1,106.25	-445.04	1,147.28	0.00	0.00	0.00
11,600.00	89.45	353.90	10,626.14	1,205.68	-455.66	1,247.27	0.00	0.00	0.00
11,700.00	89.45	353.90	10,627.10	1,305.11	-466.28	1,347.27	0.00	0.00	0.00
11,800.00	89.45	353.90	10,628.05	1,404.54	-476.90	1,447.26	0.00	0.00	0.00
11,900.00	89.45	353.90	10,629.00	1,503.97	-487.52	1,547.26	0.00	0.00	0.00
12,000.00	89.45	353.90	10,629.95	1,603.40	-498.14	1,647.26	0.00	0.00	0.00
12,100.00	89.45	353.90	10,630.90	1,702.83	-508.76	1,747.25	0.00	0.00	0.00
12,200.00	89.45	353.90	10,631.86	1,802.26	-519.38	1,847.25	0.00	0.00	0.00
12,300.00	89.45	353.90	10,632.81	1,901.69	-530.00	1,947.24	0.00	0.00	0.00
12,400.00	89.45	353.90	10,633.76	2,001.12	-540.62	2,047.24	0.00	0.00	0.00



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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,500.00	89.45	353.90	10,634.71	2,100.55	-551.24	2,147.23	0.00	0.00	0.00
12,600.00	89.45	353.90	10,635.66	2,199.98	-561.86	2,247.23	0.00	0.00	0.00
12,700.00	89.45	353.90	10,636.62	2,299.41	-572.48	2,347.22	0.00	0.00	0.00
12,800.00	89.45	353.90	10,637.57	2,398.84	-583.10	2,447.22	0.00	0.00	0.00
12,900.00	89.45	353.90	10,638.52	2,498.27	-593.72	2,547.21	0.00	0.00	0.00
13,000.00	89.45	353.90	10,639.47	2,597.70	-604.34	2,647.21	0.00	0.00	0.00
13,100.00	89.45	353.90	10,640.42	2,697.13	-614.96	2,747.21	0.00	0.00	0.00
13,200.00	89.45	353.90	10,641.37	2,796.56	-625.58	2,847.20	0.00	0.00	0.00
13,300.00	89.45	353.90	10,642.33	2,895.99	-636.20	2,947.20	0.00	0.00	0.00
13,400.00	89.45	353.90	10,643.28	2,995.42	-646.82	3,047.19	0.00	0.00	0.00
13,500.00	89.45	353.90	10,644.23	3,094.85	-657.44	3,147.19	0.00	0.00	0.00
13,600.00	89.45	353.90	10,645.18	3,194.28	-668.06	3,247.18	0.00	0.00	0.00
13,700.00	89.45	353.90	10,646.13	3,293.71	-678.69	3,347.18	0.00	0.00	0.00
13,800.00	89.45	353.90	10,647.09	3,393.14	-689.31	3,447.17	0.00	0.00	0.00
13,900.00	89.45	353.90	10,648.04	3,492.57	-699.93	3,547.17	0.00	0.00	0.00
14,000.00	89.45	353.90	10,648.99	3,592.00	-710.55	3,647.17	0.00	0.00	0.00
14,100.00	89.45	353.90	10,649.94	3,691.43	-721.17	3,747.16	0.00	0.00	0.00
14,200.00	89.45	353.90	10,650.89	3,790.86	-731.79	3,847.16	0.00	0.00	0.00
14,300.00	89.45	353.90	10,651.85	3,890.29	-742.41	3,947.15	0.00	0.00	0.00
14,400.00	89.45	353.90	10,652.80	3,989.72	-753.03	4,047.15	0.00	0.00	0.00
14,500.00	89.45	353.90	10,653.75	4,089.15	-763.65	4,147.14	0.00	0.00	0.00
14,600.00	89.45	353.90	10,654.70	4,188.58	-774.27	4,247.14	0.00	0.00	0.00
14,700.00	89.45	353.90	10,655.65	4,288.01	-784.89	4,347.13	0.00	0.00	0.00
14,800.00	89.45	353.90	10,656.61	4,387.44	-795.51	4,447.13	0.00	0.00	0.00
14,900.00	89.45	353.90	10,657.56	4,486.87	-806.13	4,547.12	0.00	0.00	0.00
15,000.00	89.45	353.90	10,658.51	4,586.30	-816.75	4,647.12	0.00	0.00	0.00
15,100.00	89.45	353.90	10,659.46	4,685.73	-827.37	4,747.12	0.00	0.00	0.00
15,156.59	89.45	353.90	10,660.00	4,741.99	-833.38	4,803.70	0.00	0.00	0.00

TD - PBHL (C32SC 3H)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (C32SC 3H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	425,146.72	738,332.47	32° 10' 1.937 N	103° 41' 48.080 W
PBHL (C32SC 3H) - plan hits target center - Point	0.00	0.00	10,660.00	4,741.99	-833.38	429,888.71	737,499.09	32° 10' 48.910 N	103° 41' 57.450 W



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Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
745.00	745.00	RUSTLER		0.00	
1,045.00	1,045.00	SALT		0.00	
4,385.00	4,385.00	BASE SALT		0.00	
4,630.01	4,630.00	DELAWARE		0.00	
6,927.97	6,920.00	BRUSHY CANYON		0.00	
8,578.22	8,565.00	1ST BSPG LIME		0.00	
9,628.32	9,615.00	1ST BSPG SAND		0.00	
9,858.32	9,845.00	2ND BSPG LIME		0.00	
10,210.01	10,195.00	2ND BSPG SAND		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,500.00	4,500.00	0.00	0.00	Nudge
5,000.00	4,999.37	0.00	-21.80	Hold
8,000.00	7,987.95	0.00	-283.27	Drop
9,000.00	8,986.68	0.00	-326.88	Hold
10,060.39	10,047.07	0.00	-326.88	KOP 10° DLS
10,954.94	10,620.00	564.29	-387.15	LP
15,156.59	10,660.00	4,741.99	-833.38	TD



DEVON ENERGY

Lea County, NM (NAD-83)
Chincoteague 32 State Com
3H

OH
Prelim 1

Anticollision Report

11 January, 2016

LEAM
Drilling Systems LLC



LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference	Prelim 1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 9,999.98 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program	Date	1/11/2016
From (usft)	To (usft)	Survey (Wellbore)
0.00	15,156.20	Prelim 1 (OH)
		Tool Name
		LEAM MWD-ADJ
		Description
		MWD - Standard

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						
Chincoteague 32 State Com						
2H - OH - Plan #1	15,156.59	15,327.85	1,034.97	852.91	5.685	CC, ES, SF
4H - OH - Plan #1	4,500.00	4,499.70	50.75	30.80	2.544	CC, ES, SF
Cotton Draw 32 State						
3H (offset) - OH - OH	8,338.79	9,956.12	355.94	305.40	7.042	CC, ES, SF
4H - OH - OH	8,385.88	10,105.00	1,549.92	1,493.75	27.596	CC, ES
4H - OH - OH	8,500.00	10,105.00	1,554.69	1,498.30	27.570	SF

Offset Design Chincoteague 32 State Com - 2H - OH - 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		Distance		Minimum Separation		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	Warning
0.00	0.00	5.60	5.60	0.00	0.00	-90.57	-17.33	-1,749.53	1,749.62				
100.00	100.00	105.60	105.60	0.09	0.10	-90.57	-17.33	-1,749.53	1,749.62	1,748.43	0.18	9,481.310	
200.00	200.00	205.60	205.60	0.31	0.32	-90.57	-17.33	-1,749.53	1,749.62	1,748.98	0.63	2,759.363	
300.00	300.00	305.60	305.60	0.54	0.55	-90.57	-17.33	-1,749.53	1,749.62	1,748.53	1.08	1,614.637	
400.00	400.00	405.60	405.60	0.76	0.77	-90.57	-17.33	-1,749.53	1,749.62	1,748.08	1.53	1,141.208	
500.00	500.00	505.60	505.60	0.99	1.00	-90.57	-17.33	-1,749.53	1,749.62	1,747.53	1.98	852.458	
600.00	600.00	605.60	605.60	1.21	1.22	-90.57	-17.33	-1,749.53	1,749.62	1,747.18	2.43	719.357	
700.00	700.00	705.60	705.60	1.43	1.45	-90.57	-17.33	-1,749.53	1,749.62	1,746.73	2.88	607.142	
800.00	800.00	805.60	805.60	1.66	1.67	-90.57	-17.33	-1,749.53	1,749.62	1,746.28	3.33	525.212	
900.00	900.00	905.60	905.60	1.88	1.90	-90.57	-17.33	-1,749.53	1,749.62	1,745.84	3.78	462.765	
1,000.00	1,000.00	1,005.60	1,005.60	2.11	2.12	-90.57	-17.33	-1,749.53	1,749.62	1,745.39	4.23	413.589	
1,100.00	1,100.00	1,105.60	1,105.60	2.33	2.35	-90.57	-17.33	-1,749.53	1,749.62	1,744.94	4.68	373.861	
1,200.00	1,200.00	1,205.60	1,205.60	2.56	2.57	-90.57	-17.33	-1,749.53	1,749.62	1,744.49	5.13	341.097	
1,300.00	1,300.00	1,305.60	1,305.60	2.78	2.80	-90.57	-17.33	-1,749.53	1,749.62	1,744.04	5.58	313.612	
1,400.00	1,400.00	1,405.60	1,405.60	3.01	3.02	-90.57	-17.33	-1,749.53	1,749.62	1,743.59	6.03	290.226	
1,500.00	1,500.00	1,505.60	1,505.60	3.23	3.25	-90.57	-17.33	-1,749.53	1,749.62	1,743.14	6.48	270.087	
1,600.00	1,600.00	1,605.60	1,605.60	3.46	3.47	-90.57	-17.33	-1,749.53	1,749.62	1,742.69	6.93	252.580	
1,700.00	1,700.00	1,705.60	1,705.60	3.68	3.69	-90.57	-17.33	-1,749.53	1,749.62	1,742.24	7.38	237.170	
1,800.00	1,800.00	1,805.60	1,805.60	3.91	3.92	-90.57	-17.33	-1,749.53	1,749.62	1,741.79	7.83	223.548	
1,900.00	1,900.00	1,905.60	1,905.60	4.13	4.14	-90.57	-17.33	-1,749.53	1,749.62	1,741.34	8.28	211.406	
2,000.00	2,000.00	2,005.60	2,005.60	4.36	4.37	-90.57	-17.33	-1,749.53	1,749.62	1,740.89	8.73	200.514	

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



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TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Chincoteague 32 State Com - 2H - OH - 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 (°)	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)				
2,100.00	2,100.00	2,105.80	2,105.80	4.58	4.59	-90.57	-17.33	-1,749.53	1,749.62	1,740.44	9.18	190.890		
2,200.00	2,200.00	2,205.80	2,205.80	4.81	4.82	-90.57	-17.33	-1,749.53	1,749.62	1,739.99	9.62	181.784		
2,300.00	2,300.00	2,305.80	2,305.80	5.03	5.04	-90.57	-17.33	-1,749.53	1,749.62	1,739.54	10.07	173.872		
2,400.00	2,400.00	2,405.80	2,405.80	5.26	5.27	-90.57	-17.33	-1,749.53	1,749.62	1,739.09	10.52	166.254		
2,500.00	2,500.00	2,505.80	2,505.80	5.48	5.49	-90.57	-17.33	-1,749.53	1,749.62	1,738.64	10.97	159.443		
2,600.00	2,600.00	2,605.80	2,605.80	5.71	5.72	-90.57	-17.33	-1,749.53	1,749.62	1,738.19	11.42	153.188		
2,700.00	2,700.00	2,705.80	2,705.80	5.93	5.94	-90.57	-17.33	-1,749.53	1,749.62	1,737.74	11.87	147.369		
2,800.00	2,800.00	2,805.80	2,805.80	6.15	6.17	-90.57	-17.33	-1,749.53	1,749.62	1,737.29	12.32	141.992		
2,900.00	2,900.00	2,905.80	2,905.80	6.38	6.39	-90.57	-17.33	-1,749.53	1,749.62	1,736.84	12.77	136.995		
3,000.00	3,000.00	3,005.80	3,005.80	6.60	6.62	-90.57	-17.33	-1,749.53	1,749.62	1,736.39	13.22	132.336		
3,100.00	3,100.00	3,105.80	3,105.80	6.83	6.84	-90.57	-17.33	-1,749.53	1,749.62	1,735.95	13.67	127.985		
3,200.00	3,200.00	3,205.80	3,205.80	7.05	7.07	-90.57	-17.33	-1,749.53	1,749.62	1,735.50	14.12	123.910		
3,300.00	3,300.00	3,305.80	3,305.80	7.28	7.29	-90.57	-17.33	-1,749.53	1,749.62	1,735.05	14.57	120.087		
3,400.00	3,400.00	3,405.80	3,405.80	7.50	7.52	-90.57	-17.33	-1,749.53	1,749.62	1,734.60	15.02	116.493		
3,500.00	3,500.00	3,505.80	3,505.80	7.73	7.74	-90.57	-17.33	-1,749.53	1,749.62	1,734.15	15.47	113.107		
3,600.00	3,600.00	3,605.80	3,605.80	7.95	7.97	-90.57	-17.33	-1,749.53	1,749.62	1,733.70	15.92	109.913		
3,700.00	3,700.00	3,705.80	3,705.80	8.18	8.19	-90.57	-17.33	-1,749.53	1,749.62	1,733.25	16.37	106.895		
3,800.00	3,800.00	3,805.80	3,805.80	8.40	8.41	-90.57	-17.33	-1,749.53	1,749.62	1,732.80	16.82	104.037		
3,900.00	3,900.00	3,905.80	3,905.80	8.63	8.64	-90.57	-17.33	-1,749.53	1,749.62	1,732.35	17.27	101.329		
4,000.00	4,000.00	4,005.80	4,005.80	8.85	8.86	-90.57	-17.33	-1,749.53	1,749.62	1,731.90	17.72	98.757		
4,100.00	4,100.00	4,105.80	4,105.80	9.08	9.09	-90.57	-17.33	-1,749.53	1,749.62	1,731.45	18.17	96.314		
4,200.00	4,200.00	4,205.80	4,205.80	9.30	9.31	-90.57	-17.33	-1,749.53	1,749.62	1,731.00	18.62	93.988		
4,300.00	4,300.00	4,305.80	4,305.80	9.53	9.54	-90.57	-17.33	-1,749.53	1,749.62	1,730.55	19.08	91.772		
4,400.00	4,400.00	4,405.80	4,405.80	9.75	9.76	-90.57	-17.33	-1,749.53	1,749.62	1,730.10	19.51	89.658		
4,500.00	4,500.00	4,505.80	4,505.80	9.98	9.99	-90.57	-17.33	-1,749.53	1,749.62	1,729.65	19.96	87.639		
4,600.00	4,600.00	4,607.28	4,607.28	10.19	10.22	-0.57	-17.33	-1,749.53	1,748.74	1,728.34	20.40	85.731		
4,700.00	4,699.96	4,737.33	4,737.32	10.38	10.47	-0.80	-18.39	-1,748.27	1,745.16	1,724.33	20.84	83.751		
4,800.00	4,799.86	4,866.96	4,866.86	10.58	10.70	-0.71	-21.33	-1,744.77	1,738.13	1,716.88	21.25	81.788		
4,900.00	4,899.86	4,995.88	4,995.57	10.79	10.94	-0.87	-26.12	-1,739.06	1,727.66	1,706.00	21.66	79.757		
5,000.00	4,999.37	5,118.44	5,117.74	10.99	11.17	-1.10	-32.38	-1,731.60	1,713.61	1,691.76	22.06	77.696		
5,100.00	5,098.99	5,217.10	5,216.02	11.20	11.38	-1.29	-37.90	-1,725.01	1,698.57	1,676.13	22.44	75.669		
5,200.00	5,198.80	5,315.76	5,314.30	11.42	11.55	-1.50	-43.43	-1,718.42	1,683.35	1,660.53	22.83	73.739		
5,300.00	5,298.22	5,414.42	5,412.58	11.63	11.75	-1.70	-48.96	-1,711.84	1,668.16	1,644.94	23.22	71.843		
5,400.00	5,397.84	5,513.07	5,510.87	11.85	11.96	-1.91	-54.49	-1,705.25	1,652.98	1,629.36	23.61	70.001		
5,500.00	5,497.46	5,611.73	5,609.15	12.07	12.15	-2.12	-60.01	-1,698.66	1,637.82	1,613.61	24.01	68.210		
5,600.00	5,597.08	5,710.39	5,707.43	12.29	12.36	-2.34	-65.54	-1,692.08	1,622.69	1,598.28	24.41	66.470		
5,700.00	5,696.70	5,809.05	5,805.72	12.52	12.58	-2.56	-71.07	-1,685.49	1,607.58	1,582.76	24.82	64.779		
5,800.00	5,796.32	5,907.71	5,904.00	12.75	12.77	-2.79	-76.59	-1,678.90	1,592.50	1,567.27	25.22	63.135		
5,900.00	5,895.94	6,006.37	6,002.28	12.97	12.99	-3.02	-82.12	-1,672.31	1,577.44	1,551.80	25.63	61.538		
6,000.00	5,895.56	6,105.03	6,100.57	13.20	13.20	-3.25	-87.65	-1,665.73	1,562.40	1,536.35	26.05	59.966		
6,100.00	6,095.18	6,203.68	6,198.85	13.44	13.42	-3.49	-93.18	-1,659.14	1,547.39	1,520.93	26.46	58.477		
6,200.00	6,194.80	6,302.34	6,297.13	13.67	13.64	-3.74	-98.70	-1,652.55	1,532.41	1,505.53	26.88	57.010		
6,300.00	6,294.42	6,401.00	6,395.42	13.90	13.86	-3.98	-104.23	-1,645.97	1,517.45	1,490.15	27.30	55.584		
6,400.00	6,394.04	6,499.66	6,493.70	14.14	14.08	-4.24	-109.76	-1,639.38	1,502.53	1,474.80	27.72	54.198		
6,500.00	6,493.66	6,598.32	6,591.98	14.38	14.30	-4.49	-115.28	-1,632.79	1,487.63	1,459.48	28.15	52.849		
6,600.00	6,593.28	6,696.98	6,690.26	14.62	14.53	-4.78	-120.81	-1,626.21	1,472.76	1,444.19	28.58	51.538		
6,700.00	6,692.90	6,795.63	6,788.55	14.86	14.76	-5.03	-126.34	-1,619.62	1,457.93	1,428.92	29.01	50.263		
6,800.00	6,792.52	6,894.29	6,886.83	15.10	14.99	-5.30	-131.87	-1,613.03	1,443.13	1,413.69	29.44	49.023		
6,900.00	6,892.14	6,992.95	6,985.11	15.34	15.22	-5.58	-137.39	-1,606.44	1,428.36	1,398.48	29.87	47.816		
7,000.00	6,991.76	7,091.61	7,083.40	15.59	15.45	-5.87	-142.92	-1,599.86	1,413.62	1,383.31	30.31	46.641		
7,100.00	7,091.37	7,190.27	7,174.67	15.83	15.66	-6.13	-147.86	-1,593.97	1,398.15	1,368.42	30.73	45.532		
7,200.00	7,190.99	7,274.36	7,265.56	16.08	15.87	-6.37	-152.31	-1,588.67	1,383.25	1,354.10	31.15	44.474		

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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
7,300.00	7,290.81	7,365.71	7,356.70	16.32	16.07	-6.60	-156.30	-1,583.91	1,371.92	1,340.36	31.57	43.462	
7,400.00	7,390.23	7,457.25	7,448.08	16.57	16.27	-6.81	-159.84	-1,579.70	1,369.16	1,327.18	31.98	42.494	
7,500.00	7,489.85	7,548.98	7,539.88	16.82	16.48	-7.00	-162.90	-1,578.04	1,346.97	1,314.56	32.40	41.569	
7,600.00	7,589.47	7,640.87	7,631.48	17.07	16.88	-7.17	-165.51	-1,572.94	1,335.33	1,302.51	32.82	40.885	
7,700.00	7,689.09	7,732.93	7,723.48	17.32	16.87	-7.32	-167.84	-1,570.40	1,324.24	1,291.01	33.24	39.841	
7,800.00	7,788.71	7,825.13	7,815.84	17.57	17.07	-7.44	-169.30	-1,568.42	1,313.71	1,280.05	33.65	39.035	
7,900.00	7,888.33	7,917.46	7,907.96	17.82	17.26	-7.55	-170.48	-1,567.01	1,303.72	1,269.65	34.07	38.265	
8,000.00	7,987.95	8,009.92	8,000.41	18.07	17.46	-7.63	-171.19	-1,566.17	1,294.28	1,259.80	34.48	37.532	
8,100.00	8,087.61	8,102.72	8,093.21	18.30	17.84	-7.68	-171.42	-1,565.89	1,285.82	1,250.93	34.90	36.848	
8,200.00	8,187.33	8,202.44	8,192.93	18.51	17.84	-7.72	-171.42	-1,565.89	1,278.48	1,243.17	35.31	36.208	
8,300.00	8,287.12	8,302.23	8,292.72	18.72	18.05	-7.76	-171.42	-1,565.89	1,272.00	1,236.26	35.73	35.597	
8,400.00	8,386.96	8,402.07	8,392.56	18.92	18.26	-7.79	-171.42	-1,565.89	1,266.38	1,230.22	36.16	35.025	
8,500.00	8,486.84	8,501.85	8,492.44	19.12	18.48	-7.82	-171.42	-1,565.89	1,261.62	1,225.05	36.58	34.492	
8,600.00	8,586.76	8,601.88	8,592.36	19.32	18.69	-7.84	-171.42	-1,565.89	1,257.74	1,220.74	37.00	33.997	
8,700.00	8,686.72	8,701.83	8,692.32	19.52	18.91	-7.85	-171.42	-1,565.89	1,254.71	1,217.30	37.41	33.537	
8,800.00	8,786.69	8,801.81	8,792.29	19.71	19.12	-7.87	-171.42	-1,565.89	1,252.55	1,214.72	37.83	33.112	
8,900.00	8,886.66	8,901.80	8,892.28	19.90	19.34	-7.87	-171.42	-1,565.89	1,251.25	1,213.01	38.24	32.721	
9,000.00	8,986.68	9,001.79	8,992.28	20.09	19.55	-7.88	-171.42	-1,565.89	1,250.82	1,212.23	38.59	32.412	
9,100.00	9,086.68	9,101.79	9,092.28	20.28	19.77	-7.88	-171.42	-1,565.89	1,250.82	1,211.81	38.91	32.063	
9,200.00	9,186.68	9,201.79	9,192.28	20.49	19.98	-7.88	-171.42	-1,565.89	1,250.82	1,211.37	39.45	31.709	
9,300.00	9,286.68	9,301.79	9,292.28	20.70	20.20	-7.88	-171.42	-1,565.89	1,250.82	1,210.94	39.88	31.363	
9,400.00	9,386.66	9,401.79	9,392.28	20.92	20.41	-7.88	-171.42	-1,565.89	1,250.82	1,210.50	40.32	31.023	
9,500.00	9,486.66	9,501.79	9,492.28	21.13	20.63	-7.88	-171.42	-1,565.89	1,250.82	1,210.06	40.76	30.691	
9,600.00	9,586.66	9,601.79	9,592.28	21.34	20.85	-7.88	-171.42	-1,565.89	1,250.82	1,209.63	41.19	30.365	
9,700.00	9,686.66	9,701.79	9,692.28	21.55	21.06	-7.88	-171.42	-1,565.89	1,250.82	1,209.19	41.63	30.047	
9,800.00	9,786.66	9,801.79	9,792.28	21.77	21.28	-7.88	-171.42	-1,565.89	1,250.82	1,208.75	42.07	29.734	
9,900.00	9,886.66	9,901.79	9,892.28	21.98	21.50	-7.88	-171.42	-1,565.89	1,250.82	1,208.32	42.50	29.428	
10,000.00	9,986.66	10,001.79	9,992.28	22.19	21.71	-7.88	-171.42	-1,565.89	1,250.82	1,207.88	42.94	29.128	
10,005.35	9,982.03	10,007.15	9,997.83	22.20	21.73	-7.88	-171.42	-1,565.89	1,250.82	1,207.85	42.97	29.123	
10,060.38	10,047.07	10,043.81	10,034.09	22.32	21.80	-7.86	-171.14	-1,566.08	1,251.10	1,207.94	43.18	28.984	
10,100.00	10,086.65	10,083.99	10,054.44	22.41	21.84	-91.66	-170.25	-1,566.67	1,252.04	1,208.70	43.34	28.886	
10,150.00	10,136.32	10,100.00	10,090.26	22.52	21.91	-91.50	-167.20	-1,568.67	1,254.28	1,210.76	43.52	28.821	
10,200.00	10,165.30	10,115.31	10,105.41	22.63	21.94	-91.24	-165.34	-1,569.90	1,257.44	1,213.78	43.66	28.804	
10,260.00	10,233.24	10,150.00	10,136.47	22.74	21.99	-91.01	-159.88	-1,573.51	1,261.80	1,217.97	43.83	28.791	
10,300.00	10,279.78	10,166.25	10,155.27	22.86	22.02	-90.62	-156.73	-1,575.56	1,267.08	1,223.11	43.96	28.821	
10,360.00	10,324.51	10,200.00	10,167.73	22.97	22.07	-90.31	-149.00	-1,580.68	1,273.49	1,229.35	44.14	28.854	
10,400.00	10,367.14	10,216.58	10,203.45	23.09	22.09	-89.78	-144.62	-1,583.57	1,280.79	1,236.50	44.28	28.922	
10,450.00	10,407.34	10,250.00	10,234.69	23.22	22.13	-89.40	-134.85	-1,590.14	1,289.16	1,244.69	44.47	28.990	
10,500.00	10,444.80	10,266.09	10,249.43	23.36	22.15	-88.73	-129.31	-1,593.66	1,298.35	1,253.71	44.64	29.087	
10,550.00	10,479.23	10,300.00	10,279.92	23.51	22.19	-88.30	-116.94	-1,601.82	1,308.56	1,263.71	44.85	29.177	
10,600.00	10,510.37	10,314.58	10,292.75	23.68	22.21	-87.47	-111.16	-1,605.63	1,319.51	1,274.46	45.05	29.292	
10,650.00	10,537.99	10,338.38	10,313.31	23.87	22.23	-86.77	-101.15	-1,612.23	1,331.34	1,286.08	45.28	29.403	
10,700.00	10,561.87	10,361.86	10,333.08	24.10	22.26	-86.01	-90.58	-1,619.20	1,343.96	1,298.43	45.53	29.516	
10,750.00	10,581.83	10,384.99	10,352.04	24.36	22.29	-85.21	-79.52	-1,626.49	1,357.32	1,311.51	45.81	29.629	
10,800.00	10,597.73	10,400.00	10,364.05	24.64	22.30	-84.14	-72.00	-1,631.45	1,371.41	1,325.32	46.09	29.757	
10,850.00	10,609.43	10,430.09	10,387.39	24.95	22.34	-83.45	-56.15	-1,641.90	1,386.07	1,339.64	46.43	29.851	
10,900.00	10,616.85	10,450.00	10,402.27	25.30	22.37	-82.44	-45.11	-1,649.18	1,401.37	1,354.60	46.77	29.962	
10,954.94	10,620.00	10,475.57	10,420.70	25.71	22.41	-81.41	-30.31	-1,658.94	1,418.80	1,371.61	47.19	30.067	
11,000.00	10,620.43	10,500.00	10,437.55	26.07	22.44	-82.16	-15.55	-1,668.67	1,433.80	1,386.14	47.65	30.090	
11,100.00	10,621.38	11,294.23	10,626.11	26.94	26.82	-89.91	699.95	-1,835.46	1,432.95	1,379.72	53.23	26.918	
11,200.00	10,622.34	11,393.75	10,626.58	27.92	27.76	-89.89	796.48	-1,836.26	1,423.13	1,367.94	55.20	25.784	
11,300.00	10,623.29	11,493.26	10,627.04	28.98	28.80	-89.87	895.97	-1,837.07	1,413.32	1,355.99	57.33	24.854	



LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Chincoteague 32 State Com - 2H - OH - 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		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)					
11,400.00	10,824.24	11,592.78	10,827.51	30.13	29.91	-89.85	995.48	-1,837.87	1,403.50	1,343.90	99.81	23.548	
11,500.00	10,825.19	11,692.29	10,827.98	31.34	31.08	-89.83	1,094.99	-1,838.68	1,393.69	1,331.66	62.03	22.470	
11,600.00	10,826.14	11,791.81	10,828.44	32.62	32.33	-89.81	1,194.50	-1,839.48	1,383.87	1,319.31	64.56	21.435	
11,700.00	10,827.10	11,891.33	10,828.91	33.95	33.62	-89.79	1,294.02	-1,840.29	1,374.08	1,306.85	67.21	20.445	
11,800.00	10,828.05	11,990.84	10,829.37	35.33	34.98	-89.77	1,393.53	-1,841.09	1,364.25	1,294.30	69.94	19.505	
11,900.00	10,829.00	12,090.36	10,829.84	36.76	36.34	-89.74	1,493.04	-1,841.90	1,354.43	1,281.67	72.77	18.514	
12,000.00	10,829.95	12,189.87	10,830.31	38.22	37.76	-89.72	1,592.55	-1,842.70	1,344.62	1,268.96	75.66	17.772	
12,100.00	10,830.90	12,289.39	10,830.77	39.72	39.22	-89.70	1,692.06	-1,843.51	1,334.80	1,256.18	78.62	16.977	
12,200.00	10,831.86	12,388.90	10,831.24	41.24	40.70	-89.68	1,791.57	-1,844.31	1,324.99	1,243.35	81.64	16.229	
12,300.00	10,832.81	12,488.42	10,831.70	42.80	42.21	-89.65	1,891.08	-1,845.12	1,315.18	1,230.46	84.72	15.524	
12,400.00	10,833.76	12,587.94	10,832.17	44.38	43.75	-89.63	1,990.60	-1,845.92	1,305.36	1,217.53	87.84	14.861	
12,500.00	10,834.71	12,687.45	10,832.64	45.98	45.30	-89.61	2,090.11	-1,846.73	1,295.55	1,204.55	91.00	14.237	
12,600.00	10,835.66	12,786.97	10,833.10	47.60	46.88	-89.58	2,189.62	-1,847.53	1,285.74	1,191.54	94.20	13.649	
12,700.00	10,836.62	12,886.48	10,833.57	49.24	48.47	-89.56	2,289.13	-1,848.34	1,275.93	1,178.49	97.43	13.095	
12,800.00	10,837.57	12,986.00	10,834.03	50.90	50.07	-89.53	2,388.64	-1,849.14	1,266.11	1,165.41	100.70	12.573	
12,900.00	10,838.52	13,085.52	10,834.50	52.57	51.70	-89.51	2,488.15	-1,849.95	1,256.30	1,152.31	103.99	12.081	
13,000.00	10,839.47	13,185.03	10,834.97	54.25	53.33	-89.48	2,587.67	-1,850.75	1,246.49	1,139.16	107.31	11.616	
13,100.00	10,840.42	13,284.55	10,835.43	55.95	54.98	-89.45	2,687.18	-1,851.56	1,236.68	1,126.02	110.65	11.176	
13,200.00	10,841.37	13,384.06	10,835.90	57.65	56.63	-89.43	2,786.69	-1,852.36	1,226.87	1,112.85	114.02	10.760	
13,300.00	10,842.33	13,483.58	10,836.36	59.37	58.30	-89.40	2,886.20	-1,853.16	1,217.06	1,099.66	117.40	10.367	
13,400.00	10,843.28	13,583.10	10,836.83	61.09	59.98	-89.37	2,985.71	-1,853.97	1,207.24	1,086.45	120.80	9.994	
13,500.00	10,844.23	13,682.61	10,837.30	62.83	61.66	-89.34	3,085.22	-1,854.77	1,197.43	1,073.22	124.22	9.640	
13,600.00	10,845.18	13,782.13	10,837.76	64.57	63.35	-89.31	3,184.73	-1,855.58	1,187.62	1,059.98	127.65	9.304	
13,700.00	10,846.13	13,881.64	10,838.23	66.32	65.05	-89.29	3,284.25	-1,856.38	1,177.81	1,046.72	131.09	8.985	
13,800.00	10,847.09	13,981.16	10,838.69	68.07	66.76	-89.26	3,383.76	-1,857.19	1,168.00	1,033.46	134.55	8.681	
13,900.00	10,848.04	14,080.68	10,839.16	69.83	68.47	-89.23	3,483.27	-1,857.99	1,158.20	1,020.18	138.02	8.392	
14,000.00	10,848.99	14,180.19	10,839.63	71.60	70.19	-89.20	3,582.78	-1,858.80	1,148.39	1,006.89	141.50	8.118	
14,100.00	10,849.94	14,279.71	10,840.09	73.37	71.91	-89.16	3,682.29	-1,859.60	1,138.58	993.59	144.99	7.853	
14,200.00	10,850.89	14,379.22	10,840.56	75.15	73.63	-89.13	3,781.80	-1,860.41	1,128.77	980.29	148.48	7.602	
14,300.00	10,851.85	14,478.74	10,841.02	76.93	75.36	-89.10	3,881.32	-1,861.21	1,118.96	966.97	151.99	7.362	
14,400.00	10,852.80	14,578.25	10,841.49	78.72	77.10	-89.07	3,980.83	-1,862.02	1,109.15	953.65	155.51	7.132	
14,500.00	10,853.75	14,677.77	10,841.96	80.50	78.84	-89.04	4,080.34	-1,862.82	1,099.35	940.32	159.03	6.913	
14,600.00	10,854.70	14,777.29	10,842.42	82.30	80.58	-89.00	4,179.85	-1,863.63	1,089.54	926.98	162.59	6.702	
14,700.00	10,855.65	14,876.80	10,842.89	84.09	82.33	-88.97	4,279.36	-1,864.43	1,079.73	913.64	166.10	6.501	
14,800.00	10,856.61	14,976.32	10,843.35	85.89	84.08	-88.93	4,378.87	-1,865.24	1,069.93	900.29	169.64	6.307	
14,900.00	10,857.56	15,075.83	10,843.82	87.70	85.83	-88.90	4,478.38	-1,866.04	1,060.12	886.93	173.19	6.121	
15,000.00	10,858.51	15,175.35	10,844.29	89.50	87.58	-88.86	4,577.90	-1,866.85	1,050.32	873.58	176.74	5.943	
15,100.00	10,859.46	15,274.87	10,844.75	91.31	89.34	-88.82	4,677.41	-1,867.65	1,040.51	860.21	180.30	5.771	
15,156.59	10,860.00	15,327.85	10,845.00	92.14	90.28	-88.80	4,730.39	-1,868.08	1,034.97	852.91	182.08	5.685 CC, 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
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Corn
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Chincoteague 32 State Corn - 4H - OH - 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		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	89.40	0.53	50.75	50.75	50.58	0.17	295.610	
100.00	100.00	99.70	99.70	0.09	0.09	89.40	0.53	50.75	50.75	50.13	0.82	81.753	
200.00	200.00	199.70	199.70	0.31	0.31	89.40	0.53	50.75	50.75	49.68	1.07	47.418	
300.00	300.00	299.70	299.70	0.54	0.53	89.40	0.53	50.75	50.75	49.23	1.52	33.393	
400.00	400.00	399.70	399.70	0.76	0.76	89.40	0.53	50.75	50.75	48.78	1.97	25.771	
500.00	500.00	499.70	499.70	0.99	0.98	89.40	0.53	50.75	50.75	48.33	2.42	20.981	
600.00	600.00	599.70	599.70	1.21	1.21	89.40	0.53	50.75	50.75	47.88	2.87	17.993	
700.00	700.00	699.70	699.70	1.43	1.43	89.40	0.53	50.75	50.75	47.43	3.32	15.296	
800.00	800.00	799.70	799.70	1.66	1.66	89.40	0.53	50.75	50.75	46.99	3.77	13.471	
900.00	900.00	899.70	899.70	1.88	1.88	89.40	0.53	50.75	50.75	46.54	4.22	12.035	
1,000.00	1,000.00	999.70	999.70	2.11	2.11	89.40	0.53	50.75	50.75	46.09	4.67	10.876	
1,100.00	1,100.00	1,099.70	1,099.70	2.33	2.33	89.40	0.53	50.75	50.75	45.64	5.12	9.920	
1,200.00	1,200.00	1,199.70	1,199.70	2.56	2.56	89.40	0.53	50.75	50.75	45.19	5.57	9.119	
1,300.00	1,300.00	1,299.70	1,299.70	2.78	2.78	89.40	0.53	50.75	50.75	44.74	6.02	8.437	
1,400.00	1,400.00	1,399.70	1,399.70	3.01	3.01	89.40	0.53	50.75	50.75	44.29	6.46	7.851	
1,500.00	1,500.00	1,499.70	1,499.70	3.23	3.23	89.40	0.53	50.75	50.75	43.84	6.91	7.340	
1,600.00	1,600.00	1,599.70	1,599.70	3.46	3.46	89.40	0.53	50.75	50.75	43.39	7.36	6.892	
1,700.00	1,700.00	1,699.70	1,699.70	3.68	3.68	89.40	0.53	50.75	50.75	42.94	7.81	6.496	
1,800.00	1,800.00	1,799.70	1,799.70	3.91	3.91	89.40	0.53	50.75	50.75	42.49	8.26	6.142	
1,900.00	1,900.00	1,899.70	1,899.70	4.13	4.13	89.40	0.53	50.75	50.75	42.04	8.71	5.825	
2,000.00	2,000.00	1,999.70	1,999.70	4.36	4.36	89.40	0.53	50.75	50.75	41.59	9.16	5.540	
2,100.00	2,100.00	2,099.70	2,099.70	4.58	4.58	89.40	0.53	50.75	50.75	41.14	9.61	5.280	
2,200.00	2,200.00	2,199.70	2,199.70	4.81	4.81	89.40	0.53	50.75	50.75	40.69	10.06	5.045	
2,300.00	2,300.00	2,299.70	2,299.70	5.03	5.03	89.40	0.53	50.75	50.75	40.24	10.51	4.829	
2,400.00	2,400.00	2,399.70	2,399.70	5.26	5.26	89.40	0.53	50.75	50.75	39.79	10.96	4.631	
2,500.00	2,500.00	2,499.70	2,499.70	5.48	5.48	89.40	0.53	50.75	50.75	39.34	11.41	4.448	
2,600.00	2,600.00	2,599.70	2,599.70	5.71	5.70	89.40	0.53	50.75	50.75	38.89	11.86	4.280	
2,700.00	2,700.00	2,699.70	2,699.70	5.93	5.93	89.40	0.53	50.75	50.75	38.44	12.31	4.123	
2,800.00	2,800.00	2,799.70	2,799.70	6.15	6.15	89.40	0.53	50.75	50.75	37.99	12.76	3.978	
2,900.00	2,900.00	2,899.70	2,899.70	6.38	6.38	89.40	0.53	50.75	50.75	37.55	13.21	3.843	
3,000.00	3,000.00	2,999.70	2,999.70	6.60	6.60	89.40	0.53	50.75	50.75	37.10	13.66	3.716	
3,100.00	3,100.00	3,099.70	3,099.70	6.83	6.83	89.40	0.53	50.75	50.75	36.65	14.11	3.598	
3,200.00	3,200.00	3,199.70	3,199.70	7.05	7.05	89.40	0.53	50.75	50.75	36.20	14.56	3.487	
3,300.00	3,300.00	3,299.70	3,299.70	7.28	7.28	89.40	0.53	50.75	50.75	35.75	15.01	3.382	
3,400.00	3,400.00	3,399.70	3,399.70	7.50	7.50	89.40	0.53	50.75	50.75	35.30	15.46	3.284	
3,500.00	3,500.00	3,499.70	3,499.70	7.73	7.73	89.40	0.53	50.75	50.75	34.85	15.90	3.191	
3,600.00	3,600.00	3,599.70	3,599.70	7.95	7.95	89.40	0.53	50.75	50.75	34.40	16.35	3.103	
3,700.00	3,700.00	3,699.70	3,699.70	8.18	8.18	89.40	0.53	50.75	50.75	33.95	16.80	3.020	
3,800.00	3,800.00	3,799.70	3,799.70	8.40	8.40	89.40	0.53	50.75	50.75	33.50	17.25	2.942	
3,900.00	3,900.00	3,899.70	3,899.70	8.63	8.63	89.40	0.53	50.75	50.75	33.05	17.70	2.867	
4,000.00	4,000.00	3,999.70	3,999.70	8.85	8.85	89.40	0.53	50.75	50.75	32.60	18.15	2.796	
4,100.00	4,100.00	4,099.70	4,099.70	9.08	9.08	89.40	0.53	50.75	50.75	32.15	18.60	2.728	
4,200.00	4,200.00	4,199.70	4,199.70	9.30	9.30	89.40	0.53	50.75	50.75	31.70	19.05	2.664	
4,300.00	4,300.00	4,299.70	4,299.70	9.53	9.53	89.40	0.53	50.75	50.75	31.25	19.50	2.603	
4,400.00	4,400.00	4,399.70	4,399.70	9.75	9.75	89.40	0.53	50.75	50.75	30.80	19.95	2.544 CC, ES, SF	
4,500.00	4,500.00	4,499.70	4,499.70	9.98	9.98	89.40	0.53	50.75	50.75	32.12	20.37	2.577	
4,600.00	4,600.00	4,599.70	4,599.70	10.19	10.18	179.42	0.53	51.80	52.48	36.94	20.75	2.780	
4,700.00	4,699.96	4,597.71	4,597.57	10.38	10.38	179.47	0.53	54.16	57.69	45.23	21.13	3.141	
4,800.00	4,799.88	4,796.27	4,796.13	10.56	10.56	179.54	0.53	58.41	66.35	56.96	21.50	3.650	
4,900.00	4,899.88	4,894.29	4,893.98	10.79	10.78	179.61	0.53	64.31	78.46	72.12	21.86	4.298	
5,000.00	4,999.37	4,991.52	4,991.01	10.99	10.98	179.67	0.53	71.83	93.98				
5,100.00	5,098.99	5,089.98	5,088.98	11.20	11.18	179.72	0.53	80.39	111.34	89.08	22.26	5.002	

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
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Chincoteague 32 State Com - 4H - OH - 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		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)	
5,200.00	5,198.80	5,188.44	5,187.09	11.42	11.39	179.76	0.53	88.98	128.70	108.04		22.96	5.580	
5,300.00	5,298.22	5,286.92	5,285.19	11.63	11.60	179.79	0.53	97.56	146.07	123.01		23.06	6.335	
5,400.00	5,397.84	5,385.40	5,383.30	11.85	11.82	179.81	0.53	106.14	163.43	139.97		23.46	6.968	
5,500.00	5,497.46	5,483.88	5,481.41	12.07	12.03	179.83	0.53	114.73	180.80	156.93		23.87	7.575	
5,600.00	5,597.08	5,582.36	5,579.51	12.29	12.25	179.84	0.53	123.31	198.18	173.89		24.27	8.164	
5,700.00	5,696.70	5,680.84	5,677.62	12.52	12.47	179.86	0.53	131.89	215.52	190.84		24.68	8.732	
5,800.00	5,796.32	5,779.32	5,775.72	12.75	12.70	179.87	0.53	140.48	232.89	207.80		25.09	9.281	
5,900.00	5,895.94	5,877.80	5,873.83	12.97	12.92	179.88	0.53	149.08	250.25	224.75		25.51	9.812	
6,000.00	5,995.56	5,976.29	5,971.94	13.20	13.15	179.88	0.53	157.64	267.62	241.70		25.92	10.325	
6,100.00	6,095.18	6,076.42	6,071.70	13.44	13.37	179.89	0.53	166.18	284.80	258.46		26.33	10.815	
6,200.00	6,194.80	6,177.66	6,172.64	13.67	13.58	179.90	0.53	173.97	301.15	274.41		26.74	11.281	
6,300.00	6,294.42	6,279.19	6,273.94	13.90	13.79	179.90	0.53	180.89	316.54	289.49		27.15	11.661	
6,400.00	6,394.04	6,381.00	6,375.57	14.14	14.00	179.91	0.53	186.93	331.25	303.68		27.56	12.017	
6,500.00	6,493.66	6,483.06	6,477.50	14.38	14.20	179.91	0.53	192.07	344.97	316.99		27.98	12.330	
6,600.00	6,593.28	6,585.37	6,579.72	14.62	14.41	179.91	0.53	196.32	357.82	329.42		28.40	12.601	
6,700.00	6,692.90	6,687.91	6,682.20	14.86	14.62	179.92	0.53	199.88	369.77	340.96		28.81	12.834	
6,800.00	6,792.52	6,780.66	6,784.93	15.10	14.83	179.92	0.53	202.08	380.84	351.61		29.23	13.028	
6,900.00	6,892.14	6,883.61	6,887.86	15.34	15.03	179.92	0.53	203.59	391.01	361.36		29.65	13.187	
7,000.00	6,991.76	6,986.74	6,990.99	15.59	15.23	179.92	0.53	204.18	400.29	370.23		30.07	13.314	
7,100.00	7,091.37	7,086.82	7,091.07	15.83	15.42	179.93	0.53	204.19	409.02	378.53		30.48	13.417	
7,200.00	7,190.99	7,186.44	7,190.69	16.08	15.64	179.93	0.53	204.19	417.73	386.81		30.92	13.508	
7,300.00	7,290.61	7,286.08	7,290.31	16.32	15.86	179.93	0.53	204.19	426.45	395.09		31.36	13.588	
7,400.00	7,390.23	7,385.68	7,389.93	16.57	16.08	179.93	0.53	204.19	435.16	403.36		31.80	13.664	
7,500.00	7,489.85	7,485.30	7,489.55	16.82	16.30	179.93	0.53	204.19	443.88	411.64		32.24	13.768	
7,600.00	7,589.47	7,584.92	7,589.17	17.07	16.52	179.93	0.53	204.19	452.59	419.91		32.68	13.849	
7,700.00	7,689.09	7,684.54	7,688.79	17.32	16.74	179.93	0.53	204.19	461.31	428.19		33.12	13.928	
7,800.00	7,788.71	7,784.16	7,788.41	17.57	16.98	179.94	0.53	204.19	470.02	436.46		33.56	14.005	
7,900.00	7,888.33	7,883.78	7,888.03	17.82	17.18	179.94	0.53	204.19	478.74	444.74		34.00	14.079	
8,000.00	7,987.95	7,983.40	7,987.65	18.07	17.40	179.94	0.53	204.19	487.46	453.01		34.45	14.151	
8,100.00	8,087.57	8,083.05	8,087.31	18.30	17.62	179.94	0.53	204.19	495.74	460.84		34.89	14.207	
8,200.00	8,187.33	8,182.78	8,187.03	18.51	17.84	179.94	0.53	204.19	503.15	467.82		35.33	14.243	
8,300.00	8,287.12	8,282.56	8,286.82	18.72	18.06	179.94	0.53	204.19	509.89	473.93		35.76	14.264	
8,400.00	8,386.96	8,382.40	8,386.66	18.92	18.28	179.94	0.53	204.19	515.36	479.17		36.19	14.242	
8,500.00	8,486.84	8,482.29	8,486.54	19.12	18.50	179.94	0.53	204.19	520.15	483.54		36.61	14.207	
8,600.00	8,586.76	8,582.21	8,586.46	19.32	18.72	179.94	0.53	204.19	524.08	487.04		37.04	14.160	
8,700.00	8,686.72	8,682.16	8,686.42	19.52	18.94	179.94	0.53	204.19	527.13	489.67		37.46	14.072	
8,800.00	8,786.69	8,782.14	8,786.39	19.71	19.16	179.94	0.53	204.19	529.32	491.43		37.88	13.973	
8,900.00	8,886.68	8,882.13	8,886.38	19.90	19.39	179.94	0.53	204.19	530.63	492.32		38.30	13.854	
9,000.00	8,986.68	8,982.13	8,986.38	20.09	19.61	89.94	0.53	204.19	531.06	492.33		38.73	13.713	
9,100.00	9,086.68	9,082.13	9,086.38	20.28	19.83	89.94	0.53	204.19	531.06	491.91		39.15	13.564	
9,200.00	9,186.68	9,182.13	9,186.38	20.49	20.05	89.94	0.53	204.19	531.06	491.47		39.56	13.413	
9,300.00	9,286.68	9,282.13	9,286.38	20.70	20.27	89.94	0.53	204.19	531.06	491.03		40.03	13.265	
9,400.00	9,386.68	9,382.13	9,386.38	20.92	20.49	89.94	0.53	204.19	531.06	490.59		40.48	13.120	
9,500.00	9,486.68	9,482.13	9,486.38	21.13	20.72	89.94	0.53	204.19	531.06	490.14		40.92	12.979	
9,600.00	9,586.68	9,582.13	9,586.38	21.34	20.94	89.94	0.53	204.19	531.06	489.70		41.36	12.840	
9,700.00	9,686.68	9,682.13	9,686.38	21.55	21.16	89.94	0.53	204.19	531.06	489.26		41.80	12.704	
9,800.00	9,786.68	9,782.13	9,786.38	21.77	21.38	89.94	0.53	204.19	531.06	488.82		42.24	12.571	
9,900.00	9,886.68	9,882.13	9,886.38	21.98	21.60	89.94	0.53	204.19	531.06	488.38		42.69	12.441	
10,000.00	9,986.68	9,982.13	9,986.38	22.19	21.83	89.94	0.53	204.19	531.06	487.93		43.13	12.314	
10,060.39	10,047.07	10,052.52	10,046.77	22.32	21.96	89.94	0.53	204.19	531.06	487.67		43.40	12.238	
10,100.00	10,086.85	10,092.11	10,086.38	22.41	22.05	96.16	0.62	204.19	531.21	487.85		43.58	12.195	
10,150.00	10,136.32	10,142.22	10,136.38	22.52	22.16	96.37	3.71	204.19	531.81	488.04		43.78	12.149	

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

Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Chincoteague 32 State Com - 4H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
								+N/-S (usft)	+E/-W (usft)				
10,200.00	10,185.30	10,192.54	10,186.10	22.63	22.27	96.53		11.20	204.19	532.89	488.90	43.99	12.115
10,250.00	10,233.24	10,243.07	10,235.20	22.74	22.38	96.64		23.08	204.19	534.43	490.23	44.19	12.093
10,300.00	10,279.78	10,293.81	10,283.25	22.86	22.50	96.70		39.31	204.19	536.41	492.01	44.40	12.081
10,350.00	10,324.51	10,344.73	10,329.85	22.97	22.61	96.70		59.81	204.19	538.82	494.21	44.61	12.077
10,400.00	10,367.14	10,395.84	10,374.81	23.09	22.72	96.64		84.46	204.19	541.85	496.81	44.84	12.080
10,450.00	10,407.34	10,447.13	10,417.13	23.22	22.83	96.53		113.11	204.19	544.86	499.77	45.09	12.085
10,500.00	10,444.90	10,498.58	10,457.04	23.36	22.95	96.37		145.55	204.19	548.44	503.08	45.36	12.091
10,550.00	10,479.23	10,550.18	10,493.98	23.51	23.09	96.16		181.55	204.19	552.34	506.87	45.67	12.094
10,600.00	10,510.37	10,601.92	10,527.82	23.68	23.25	95.90		220.83	204.18	556.56	510.53	46.03	12.092
10,650.00	10,537.99	10,653.78	10,557.85	23.87	23.44	95.59		263.10	204.18	561.04	514.80	46.44	12.082
10,700.00	10,561.87	10,705.76	10,583.79	24.10	23.66	95.24		308.00	204.18	566.76	518.85	46.90	12.062
10,750.00	10,581.83	10,757.84	10,605.80	24.35	23.89	94.84		355.19	204.18	570.87	523.24	47.43	12.032
10,800.00	10,597.73	10,810.02	10,623.45	24.64	24.17	94.42		404.27	204.18	575.74	527.73	48.01	11.991
10,850.00	10,609.43	10,862.27	10,636.59	24.95	24.47	93.96		454.82	204.18	580.94	532.28	48.66	11.939
10,900.00	10,618.85	10,914.58	10,645.07	25.30	24.80	93.47		506.42	204.18	586.21	536.86	49.38	11.877
10,954.94	10,620.00	10,972.11	10,648.93	25.71	25.20	92.90		563.80	204.18	592.06	541.87	50.18	11.799
11,000.00	10,620.43	11,017.21	10,649.28	26.07	25.54	92.87		608.89	204.18	596.83	545.95	50.88	11.731
11,100.00	10,621.38	11,116.84	10,649.99	26.94	26.34	92.80		706.33	204.18	607.43	554.87	52.56	11.557
11,200.00	10,622.34	11,216.08	10,650.71	27.82	27.25	92.73		807.76	204.18	618.02	563.59	54.44	11.353
11,300.00	10,623.29	11,315.51	10,651.42	28.88	28.24	92.67		907.19	204.18	628.82	572.13	56.49	11.128
11,400.00	10,624.24	11,414.94	10,652.13	30.13	29.31	92.60		1,006.82	204.18	639.22	580.52	58.70	10.889
11,500.00	10,625.19	11,514.38	10,652.85	31.34	30.45	92.54		1,106.05	204.18	649.82	588.76	61.08	10.643
11,600.00	10,626.14	11,613.81	10,653.56	32.62	31.65	92.48		1,205.48	204.18	660.42	596.88	63.54	10.394
11,700.00	10,627.10	11,713.25	10,654.27	33.95	32.91	92.42		1,304.92	204.18	671.02	604.89	66.13	10.147
11,800.00	10,628.05	11,812.86	10,654.98	35.33	34.22	92.36		1,404.35	204.18	681.62	612.80	68.82	9.904
11,900.00	10,629.00	11,912.12	10,655.70	36.76	35.58	92.31		1,503.78	204.18	692.23	620.63	71.60	9.668
12,000.00	10,629.95	12,011.55	10,656.41	38.22	36.97	92.25		1,603.21	204.18	702.83	628.37	74.46	9.440
12,100.00	10,630.90	12,110.98	10,657.12	39.72	38.40	92.20		1,702.64	204.18	713.43	636.05	77.38	9.220
12,200.00	10,631.86	12,210.42	10,657.84	41.24	39.87	92.15		1,802.07	204.18	724.04	643.87	80.37	9.008
12,300.00	10,632.81	12,309.85	10,658.55	42.80	41.38	92.10		1,901.51	204.18	734.64	651.23	83.41	8.807
12,400.00	10,633.76	12,409.29	10,659.26	44.38	42.87	92.05		2,000.94	204.18	745.25	658.74	86.51	8.615
12,500.00	10,634.71	12,508.72	10,659.97	45.98	44.41	92.01		2,100.37	204.18	755.85	666.21	89.84	8.432
12,600.00	10,635.66	12,608.15	10,660.69	47.60	45.97	91.96		2,199.80	204.18	766.46	673.64	92.82	8.257
12,700.00	10,636.62	12,707.59	10,661.40	49.24	47.54	91.92		2,299.23	204.18	777.06	681.03	96.03	8.092
12,800.00	10,637.57	12,807.02	10,662.11	50.90	49.14	91.88		2,398.66	204.18	787.67	688.39	99.28	7.934
12,900.00	10,638.52	12,906.46	10,662.83	52.57	50.74	91.83		2,498.10	204.18	798.28	695.73	102.55	7.784
13,000.00	10,639.47	13,005.89	10,663.54	54.25	52.37	91.79		2,597.53	204.18	808.89	703.03	105.85	7.642
13,100.00	10,640.42	13,105.33	10,664.25	55.95	54.00	91.76		2,696.96	204.18	819.50	710.32	109.18	7.506
13,200.00	10,641.37	13,204.76	10,664.97	57.65	55.65	91.72		2,796.39	204.18	830.10	717.58	112.53	7.377
13,300.00	10,642.33	13,304.19	10,665.68	59.37	57.30	91.68		2,895.82	204.18	840.71	724.82	115.89	7.254
13,400.00	10,643.28	13,403.63	10,666.39	61.09	58.97	91.64		2,995.25	204.18	851.32	732.04	119.26	7.137
13,500.00	10,644.23	13,503.06	10,667.10	62.83	60.64	91.61		3,094.68	204.18	861.93	739.25	122.68	7.026
13,600.00	10,645.18	13,602.50	10,667.82	64.57	62.32	91.57		3,194.12	204.18	872.54	746.44	126.10	6.919
13,700.00	10,646.13	13,701.93	10,668.53	66.32	64.01	91.54		3,293.55	204.17	883.15	753.62	129.53	6.818
13,800.00	10,647.09	13,801.36	10,669.24	68.07	65.71	91.51		3,392.98	204.17	893.76	760.78	132.96	6.721
13,900.00	10,648.04	13,900.80	10,669.96	69.83	67.41	91.47		3,492.41	204.17	904.37	767.94	136.44	6.628
14,000.00	10,648.99	14,000.23	10,670.67	71.60	69.12	91.44		3,591.84	204.17	914.98	775.08	139.91	6.540
14,100.00	10,649.94	14,099.67	10,671.38	73.37	70.83	91.41		3,691.27	204.17	925.59	782.21	143.39	6.455
14,200.00	10,650.89	14,199.10	10,672.10	75.15	72.55	91.38		3,790.71	204.17	936.21	789.33	146.88	6.374
14,300.00	10,651.85	14,298.54	10,672.81	76.93	74.28	91.35		3,890.14	204.17	946.82	796.44	150.38	6.296
14,400.00	10,652.80	14,397.97	10,673.52	78.72	76.00	91.32		3,989.57	204.17	957.43	803.55	153.88	6.222
14,500.00	10,653.75	14,497.40	10,674.23	80.50	77.74	91.30		4,089.00	204.17	968.04	810.65	157.40	6.150

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
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Chincoteague 32 State Com - 4H - OH - 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			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	
14,800.00	10,854.70	14,598.84	10,674.95	82.30	79.47	91.27	4,188.43	204.17	978.66	817.74	160.92	6.082	
14,700.00	10,855.65	14,696.27	10,675.98	84.09	81.21	91.24	4,287.86	204.17	989.27	824.62	164.45	6.018	
14,800.00	10,856.61	14,795.71	10,676.37	85.89	82.95	91.21	4,387.30	204.17	999.88	831.90	167.99	5.952	
14,900.00	10,857.56	14,895.14	10,677.09	87.70	84.70	91.19	4,486.73	204.17	1,010.50	838.97	171.53	5.891	
15,000.00	10,858.51	14,894.58	10,677.80	89.50	86.45	91.16	4,586.16	204.17	1,021.11	846.03	175.07	5.832	
15,100.00	10,859.46	15,094.01	10,678.51	91.31	88.20	91.14	4,685.59	204.17	1,031.72	853.09	178.63	5.776	
15,156.59	10,860.00	15,150.28	10,678.92	92.14	89.19	91.13	4,741.96	204.17	1,037.73	857.29	180.44	5.751	



LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 3H (offset) - OH - OH														Offset Site Error: 0.00 usft
Survey Program: 135- VES GyroFlex V2, 7720-MWD-ISCWSA														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		
0.00	0.00	4.29	4.29	0.00	0.00	-17.57	2,103.06	-865.74	2,205.92					
100.00	100.00	134.20	134.20	0.09	0.10	-17.57	2,102.12	-865.59	2,205.19	2,205.01	0.18	N/A		
200.00	200.00	238.15	238.14	0.31	0.21	-17.56	2,100.82	-864.62	2,203.72	2,203.21	0.51	4,337.665		
300.00	300.00	364.84	364.79	0.54	0.29	-17.53	2,098.85	-862.80	2,201.68	2,200.87	0.81	2,713.118		
400.00	400.00	490.37	490.23	0.76	0.37	-17.49	2,094.79	-860.27	2,198.10	2,197.00	1.10	2,000.813		
500.00	500.00	589.75	589.53	0.99	0.42	-17.46	2,091.35	-857.93	2,194.10	2,192.73	1.37	1,605.866		
600.00	600.00	686.44	686.13	1.21	0.46	-17.41	2,088.36	-855.05	2,190.25	2,188.62	1.63	1,343.629		
700.00	700.00	789.11	788.70	1.43	0.51	-17.36	2,085.28	-851.74	2,186.42	2,184.53	1.89	1,154.756		
800.00	800.00	883.82	883.32	1.66	0.56	-17.30	2,082.44	-848.75	2,182.62	2,180.47	2.15	1,014.410		
900.00	900.00	984.37	983.77	1.88	0.59	-17.24	2,079.59	-845.51	2,178.95	2,176.54	2.41	903.947		
1,000.00	1,000.00	1,080.50	1,079.82	2.11	0.63	-17.19	2,076.96	-842.33	2,175.37	2,172.70	2.67	815.713		
1,100.00	1,100.00	1,185.51	1,184.72	2.33	0.68	-17.12	2,074.06	-838.74	2,171.73	2,168.81	2.93	742.447		
1,200.00	1,200.00	1,283.58	1,282.70	2.56	0.72	-17.05	2,071.34	-835.36	2,168.05	2,164.87	3.18	681.705		
1,300.00	1,300.00	1,385.64	1,384.85	2.78	0.76	-16.98	2,068.49	-831.51	2,164.28	2,160.84	3.44	629.790		
1,400.00	1,400.00	1,476.81	1,475.72	3.01	0.80	-16.91	2,066.10	-828.30	2,160.73	2,157.05	3.69	585.772		
1,500.00	1,500.00	1,571.74	1,570.58	3.23	0.83	-16.85	2,063.88	-825.11	2,157.52	2,153.57	3.94	547.361		
1,600.00	1,600.00	1,671.77	1,670.52	3.46	0.87	-16.78	2,061.67	-821.70	2,154.42	2,150.22	4.20	513.460		
1,700.00	1,700.00	1,774.31	1,772.97	3.68	0.91	-16.70	2,059.36	-818.00	2,151.22	2,146.77	4.45	483.333		
1,800.00	1,800.00	1,873.79	1,872.37	3.91	0.95	-16.63	2,057.06	-814.45	2,147.98	2,143.27	4.70	456.561		
1,900.00	1,900.00	1,967.31	1,965.80	4.13	0.98	-16.56	2,055.00	-811.13	2,144.86	2,139.90	4.96	432.740		
2,000.00	2,000.00	2,061.79	2,060.20	4.36	1.02	-16.48	2,053.43	-807.53	2,142.17	2,136.96	5.21	411.188		
2,100.00	2,100.00	2,172.42	2,170.69	4.58	1.06	-16.36	2,051.68	-802.29	2,139.32	2,133.65	5.47	391.168		
2,200.00	2,200.00	2,287.00	2,285.10	4.81	1.10	-16.24	2,049.15	-796.69	2,135.82	2,130.10	5.73	372.812		
2,300.00	2,300.00	2,399.79	2,397.72	5.03	1.14	-16.12	2,046.49	-791.31	2,131.66	2,125.69	5.99	356.164		
2,400.00	2,400.00	2,491.28	2,489.00	5.26	1.18	-16.06	2,044.03	-785.24	2,127.89	2,121.65	6.24	340.871		
2,500.00	2,500.00	2,584.41	2,581.91	5.48	1.22	-15.83	2,042.01	-779.16	2,124.01	2,117.51	6.50	326.876		
2,600.00	2,600.00	2,683.37	2,680.59	5.71	1.28	-15.66	2,039.71	-771.81	2,120.14	2,113.38	6.76	313.700		
2,700.00	2,700.00	2,809.59	2,806.53	5.93	1.30	-15.49	2,036.32	-764.52	2,115.84	2,108.62	7.02	301.367		
2,800.00	2,800.00	2,915.45	2,912.14	6.15	1.34	-15.36	2,032.42	-758.20	2,110.49	2,103.21	7.28	290.033		
2,900.00	2,900.00	3,019.55	3,015.96	6.38	1.38	-15.21	2,028.72	-751.65	2,105.40	2,097.66	7.53	279.461		
3,000.00	3,000.00	3,127.24	3,123.33	6.60	1.42	-15.06	2,024.32	-744.67	2,099.75	2,091.95	7.79	269.473		
3,100.00	3,100.00	3,229.80	3,225.38	6.83	1.46	-14.91	2,020.04	-737.88	2,093.99	2,085.94	8.05	260.170		
3,200.00	3,200.00	3,351.63	3,347.00	7.05	1.51	-14.74	2,014.28	-729.78	2,087.74	2,079.43	8.31	251.208		
3,300.00	3,300.00	3,469.13	3,463.98	7.28	1.55	-14.55	2,007.65	-720.96	2,080.35	2,071.78	8.57	242.659		
3,400.00	3,400.00	3,575.43	3,569.70	7.50	1.60	-14.34	2,001.42	-711.78	2,072.51	2,063.68	8.83	234.614		
3,500.00	3,500.00	3,678.71	3,672.39	7.73	1.64	-14.14	1,995.00	-702.76	2,064.31	2,055.22	9.09	227.008		
3,600.00	3,600.00	3,779.08	3,772.15	7.95	1.68	-13.94	1,988.90	-693.54	2,056.17	2,046.81	9.35	219.839		
3,700.00	3,700.00	3,878.62	3,871.08	8.18	1.72	-13.73	1,982.71	-684.42	2,047.91	2,038.30	9.61	213.044		
3,800.00	3,800.00	3,972.61	3,964.68	8.40	1.76	-13.53	1,977.05	-675.58	2,039.84	2,029.97	9.87	206.654		
3,900.00	3,900.00	4,061.22	4,052.58	8.63	1.79	-13.34	1,971.98	-667.69	2,032.17	2,022.04	10.13	200.691		
4,000.00	4,000.00	4,150.61	4,141.61	8.85	1.83	-13.20	1,967.05	-661.23	2,025.13	2,014.75	10.38	195.112		
4,100.00	4,100.00	4,247.01	4,237.64	9.08	1.87	-13.04	1,962.01	-654.43	2,018.43	2,007.79	10.64	189.786		
4,200.00	4,200.00	4,350.00	4,340.16	9.30	1.91	-12.84	1,956.86	-648.17	2,011.74	2,000.84	10.90	184.645		
4,300.00	4,300.00	4,440.61	4,430.40	9.53	1.94	-12.69	1,952.14	-643.48	2,005.03	1,993.88	11.15	179.826		
4,400.00	4,400.00	4,525.70	4,515.24	9.75	1.98	-12.56	1,948.18	-634.11	1,999.10	1,987.70	11.40	175.344		
4,500.00	4,500.00	4,616.32	4,605.64	9.98	2.01	-12.45	1,944.30	-629.33	1,993.76	1,982.11	11.65	171.105		
4,600.00	4,600.00	4,719.46	4,708.58	10.19	2.05	77.73	1,939.99	-624.55	1,988.50	1,976.54	11.96	166.260		
4,700.00	4,699.96	4,821.29	4,810.21	10.38	2.09	77.96	1,935.19	-620.30	1,982.46	1,970.27	12.19	162.636		
4,800.00	4,799.86	4,908.55	4,897.32	10.58	2.12	78.19	1,931.31	-617.04	1,978.42	1,964.01	12.42	159.184		
4,900.00	4,899.68	5,006.40	4,995.04	10.79	2.16	78.49	1,927.50	-613.69	1,970.66	1,958.01	12.65	155.812		
5,000.00	4,999.37	5,101.09	5,089.60	10.99	2.19	78.83	1,923.50	-610.78	1,964.36	1,951.48	12.88	152.494		
5,100.00	5,098.99	5,190.13	5,178.54	11.20	2.23	79.12	1,920.41	-607.77	1,958.60	1,945.49	13.12	149.327		

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



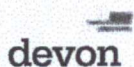
LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 3H (offset) - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 135- VES GyroFlex V2, 7720-MWD-ISCWSA													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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,198.80	5,280.77	5,269.07	11.42	2.28	79.42	1,917.58	-404.54	1,953.22	1,939.87	13.35	146.285	
5,300.00	5,298.22	5,373.08	5,361.28	11.63	2.29	79.75	1,915.34	-400.83	1,948.50	1,934.91	13.59	143.368	
5,400.00	5,397.84	5,470.28	5,458.39	11.85	2.33	80.08	1,912.89	-397.42	1,943.85	1,930.02	13.83	140.558	
5,500.00	5,497.48	5,566.55	5,554.58	12.07	2.37	80.41	1,910.75	-394.29	1,939.80	1,925.53	14.07	137.834	
5,600.00	5,597.08	5,664.11	5,652.08	12.29	2.40	80.73	1,908.45	-391.38	1,935.33	1,921.02	14.32	135.180	
5,700.00	5,696.70	5,757.81	5,745.70	12.52	2.44	81.05	1,906.82	-388.27	1,931.47	1,916.91	14.56	132.646	
5,800.00	5,796.32	5,858.01	5,845.83	12.75	2.47	81.39	1,904.76	-384.93	1,927.78	1,912.97	14.81	130.187	
5,900.00	5,895.94	5,959.92	5,947.67	12.97	2.51	81.74	1,902.71	-381.68	1,924.02	1,908.97	15.08	127.782	
6,000.00	5,995.56	6,057.29	6,044.97	13.20	2.55	82.08	1,900.72	-378.49	1,920.29	1,904.98	15.31	125.452	
6,100.00	6,095.18	6,155.81	6,143.43	13.44	2.58	82.41	1,898.80	-375.49	1,916.75	1,901.20	15.58	123.195	
6,200.00	6,194.80	6,252.85	6,240.21	13.67	2.62	82.74	1,896.92	-372.79	1,913.32	1,897.51	15.81	121.005	
6,300.00	6,294.42	6,356.53	6,344.03	13.90	2.66	83.08	1,894.89	-370.18	1,909.97	1,893.91	16.07	118.863	
6,400.00	6,394.04	6,451.88	6,439.33	14.14	2.69	83.38	1,892.90	-367.88	1,906.58	1,890.25	16.33	116.785	
6,500.00	6,493.66	6,550.13	6,538.61	14.38	2.73	83.68	1,890.95	-365.80	1,903.27	1,886.91	16.58	114.762	
6,600.00	6,593.28	6,650.32	6,638.71	14.62	2.76	83.98	1,889.04	-363.83	1,900.02	1,883.68	16.83	112.792	
6,700.00	6,692.90	6,750.42	6,738.81	14.86	2.79	84.28	1,887.16	-361.96	1,896.82	1,880.48	17.08	110.872	
6,800.00	6,792.52	6,850.50	6,838.91	15.10	2.83	84.58	1,885.31	-360.18	1,893.63	1,877.31	17.33	108.999	
6,900.00	6,892.14	6,950.58	6,939.01	15.34	2.86	84.88	1,883.48	-358.49	1,890.46	1,874.14	17.58	107.170	
7,000.00	6,991.76	7,050.58	7,039.11	15.58	2.89	85.18	1,881.68	-356.88	1,887.31	1,871.00	17.83	105.382	
7,100.00	7,091.37	7,150.59	7,139.22	15.83	2.93	85.48	1,879.90	-355.35	1,884.17	1,867.85	18.08	103.632	
7,200.00	7,190.99	7,250.57	7,239.32	16.08	2.96	85.78	1,878.14	-353.89	1,881.02	1,864.70	18.33	101.925	
7,300.00	7,290.61	7,350.52	7,339.43	16.32	3.00	86.08	1,876.40	-352.50	1,877.87	1,861.55	18.58	100.258	
7,400.00	7,390.23	7,450.44	7,439.54	16.57	3.04	86.38	1,874.68	-351.18	1,874.72	1,858.40	18.83	98.628	
7,500.00	7,489.85	7,549.34	7,538.65	16.82	3.08	86.68	1,872.98	-349.93	1,871.57	1,855.25	19.08	96.998	
7,600.00	7,589.47	7,649.21	7,638.76	17.07	3.12	86.98	1,871.29	-348.75	1,868.42	1,852.10	19.33	95.408	
7,700.00	7,689.09	7,748.06	7,737.32	17.32	3.09	87.28	1,869.62	-347.63	1,865.32	1,849.00	19.58	93.858	
7,800.00	7,788.71	7,847.87	7,837.98	17.57	3.04	87.58	1,867.97	-346.56	1,862.23	1,845.90	19.83	92.348	
7,900.00	7,888.33	7,947.66	7,937.68	17.82	3.08	87.88	1,866.34	-345.54	1,859.14	1,842.85	20.08	90.878	
8,000.00	7,987.95	8,047.42	8,037.21	18.07	3.03	88.18	1,864.72	-344.57	1,856.04	1,839.80	20.33	89.428	
8,100.00	8,087.57	8,146.14	8,136.33	18.30	3.08	88.48	1,863.12	-343.65	1,852.94	1,836.75	20.58	87.998	
8,200.00	8,187.13	8,245.81	8,235.45	18.51	3.02	88.78	1,861.53	-342.78	1,849.85	1,833.70	20.83	86.588	
8,300.00	8,286.72	8,345.44	8,335.57	18.72	3.07	89.08	1,859.95	-341.96	1,846.76	1,830.65	21.08	85.198	
8,338.79	8,325.84	8,384.12	8,373.62	18.80	3.07	89.10	1,859.78	-341.96	1,846.59	1,830.48	21.16	85.008	
8,400.00	8,386.96	8,445.03	8,434.69	18.92	3.07	89.12	1,859.60	-341.96	1,846.41	1,830.30	21.24	84.818	
8,500.00	8,486.84	8,545.57	8,535.22	19.12	3.06	89.17	1,859.42	-341.96	1,846.23	1,830.12	21.32	84.628	
8,600.00	8,586.76	8,645.06	8,634.95	19.32	3.06	89.25	1,859.24	-341.96	1,846.05	1,829.94	21.40	84.438	
8,700.00	8,686.72	8,745.33	8,735.09	19.52	3.04	89.38	1,859.06	-341.96	1,845.87	1,829.76	21.48	84.248	
8,800.00	8,786.69	8,845.44	8,835.23	19.71	3.04	89.50	1,858.88	-341.96	1,845.69	1,829.58	21.56	84.058	
8,900.00	8,886.68	8,945.55	8,935.37	19.90	3.04	89.63	1,858.70	-341.96	1,845.51	1,829.40	21.64	83.868	
9,000.00	8,986.68	9,045.58	9,035.52	20.09	3.03	89.76	1,858.52	-341.96	1,845.33	1,829.22	21.72	83.678	
9,100.00	9,086.68	9,145.58	9,135.67	20.28	3.02	89.88	1,858.34	-341.96	1,845.15	1,829.04	21.80	83.488	
9,200.00	9,186.68	9,245.55	9,235.82	20.49	3.02	89.99	1,858.16	-341.96	1,844.97	1,828.86	21.88	83.298	
9,300.00	9,286.68	9,345.48	9,335.97	20.70	3.01	90.12	1,857.98	-341.96	1,844.79	1,828.68	21.96	83.108	
9,400.00	9,386.68	9,445.37	9,436.13	20.92	3.00	90.25	1,857.80	-341.96	1,844.61	1,828.50	22.04	82.918	
9,500.00	9,486.68	9,545.23	9,536.28	21.13	3.00	90.37	1,857.62	-341.96	1,844.43	1,828.32	22.12	82.728	
9,600.00	9,586.68	9,645.06	9,636.44	21.34	3.00	90.49	1,857.44	-341.96	1,844.25	1,828.14	22.20	82.538	
9,700.00	9,686.68	9,745.85	9,737.60	21.55	3.00	90.62	1,857.26	-341.96	1,844.07	1,827.96	22.28	82.348	
9,800.00	9,786.68	9,845.60	9,837.77	21.77	3.01	90.75	1,857.08	-341.96	1,843.89	1,827.78	22.36	82.158	
9,900.00	9,886.68	9,945.31	9,937.93	21.98	3.01	90.88	1,856.90	-341.96	1,843.71	1,827.60	22.44	81.968	
10,000.00	9,986.68	10,045.99	10,038.11	22.19	3.00	91.00	1,856.72	-341.96	1,843.53	1,827.42	22.52	81.778	
10,080.39	10,047.07	10,107.36	10,100.20	22.32	3.02	91.12	1,856.54	-341.96	1,843.35	1,827.24	22.60	81.588	
10,100.00	10,086.65	10,146.11	10,138.33	22.41	3.07	91.10	1,856.36	-341.96	1,843.17	1,827.06	22.68	81.398	



LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Corn
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 3H (offset) - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 135- VES GyroFlex V2, 7720-MWD-ISCWSA													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,150.00	10,138.32	9,875.86	8,311.86	22.52	31.43	-39.07	87.06	-881.53	1,859.93	1,809.78	50.14	37.092	
10,200.00	10,185.30	9,882.39	8,312.19	22.83	31.21	-29.55	100.31	-881.20	1,907.48	1,860.13	47.35	40.286	
10,250.00	10,233.24	9,845.89	8,312.86	22.74	30.94	-23.38	116.99	-880.75	1,953.78	1,908.74	45.04	43.379	
10,300.00	10,279.78	9,827.14	8,313.57	22.86	30.83	-19.20	135.52	-880.12	1,998.48	1,955.31	43.17	46.294	
10,350.00	10,324.51	9,805.24	8,314.38	22.97	30.27	-16.20	157.39	-859.17	2,041.27	1,999.70	41.57	49.104	
10,400.00	10,367.14	9,780.20	8,315.20	23.09	29.86	-13.95	182.37	-857.81	2,081.83	2,041.69	40.15	51.855	
10,450.00	10,407.34	9,750.45	8,316.10	23.22	29.37	-12.20	212.04	-855.83	2,119.87	2,081.06	38.81	54.625	
10,500.00	10,444.80	9,707.71	8,317.40	23.36	28.86	-10.69	254.62	-852.32	2,154.99	2,117.59	37.41	57.610	
10,550.00	10,479.23	9,663.00	8,318.84	23.51	27.92	-9.48	299.08	-847.86	2,188.86	2,150.77	36.08	60.616	
10,600.00	10,510.37	9,631.06	8,319.81	23.68	27.39	-8.83	330.80	-844.21	2,215.34	2,180.40	34.95	63.390	
10,650.00	10,537.99	9,598.65	8,320.62	23.87	26.85	-7.92	362.95	-840.17	2,240.43	2,206.58	33.87	66.147	
10,700.00	10,561.87	9,563.48	8,321.30	24.10	26.27	-7.31	397.78	-835.41	2,261.94	2,229.11	32.83	68.899	
10,750.00	10,581.83	9,511.24	8,322.32	24.35	25.40	-6.88	449.53	-828.30	2,279.54	2,247.63	31.71	71.682	
10,800.00	10,597.73	9,474.00	8,323.17	24.64	24.78	-6.26	498.44	-823.44	2,293.01	2,262.16	30.85	74.333	
10,850.00	10,609.43	9,428.07	8,324.10	24.95	24.03	-5.88	531.95	-817.29	2,302.41	2,272.37	30.03	76.659	
10,900.00	10,616.85	9,392.82	8,324.58	25.30	23.45	-5.57	567.03	-812.20	2,307.88	2,278.42	29.46	78.347	
10,954.94	10,620.00	9,326.83	8,325.27	25.71	22.39	-5.14	632.08	-802.40	2,308.08	2,280.29	28.79	80.205	
11,000.00	10,620.43	9,269.91	8,326.39	26.07	21.46	-4.79	688.40	-794.22	2,307.80	2,279.17	28.43	81.189	
11,100.00	10,621.38	9,178.66	8,328.32	26.94	19.89	-4.25	778.80	-781.82	2,304.43	2,276.49	27.94	82.468	
11,200.00	10,622.34	9,096.00	8,329.81	27.92	18.43	-3.78	860.75	-771.27	2,301.87	2,274.30	27.57	83.501	
11,300.00	10,623.29	9,038.37	8,330.17	28.98	17.45	-3.44	917.89	-763.75	2,300.71	2,273.29	27.42	83.913	
11,307.40	10,623.36	9,034.29	8,330.15	29.07	17.38	-3.42	921.93	-763.20	2,300.70	2,273.29	27.41	83.935	
11,400.00	10,624.24	8,971.18	8,329.31	30.13	16.32	-3.04	984.45	-754.86	2,301.48	2,274.25	27.23	84.520	
11,500.00	10,625.19	8,879.02	8,327.87	31.34	14.82	-2.50	1,075.82	-742.87	2,303.09	2,276.19	26.90	85.623	
11,600.00	10,626.14	8,790.40	8,326.01	32.62	13.39	-2.02	1,163.86	-732.74	2,305.10	2,278.46	26.84	86.525	
11,700.00	10,627.10	8,718.00	8,324.08	33.95	12.22	-1.85	1,235.88	-725.56	2,308.11	2,281.57	26.54	86.973	
11,800.00	10,628.05	8,676.81	8,322.50	35.33	11.53	-1.43	1,276.79	-721.09	2,312.81	2,286.12	26.68	86.685	
11,900.00	10,629.00	8,664.00	8,321.66	36.78	11.31	-1.36	1,289.48	-719.54	2,320.79	2,293.76	27.03	85.863	
12,000.00	10,629.95	8,633.00	8,318.59	38.22	10.79	-1.17	1,320.08	-715.56	2,332.00	2,304.71	27.29	85.464	
12,100.00	10,630.90	8,614.96	8,316.07	39.72	10.50	-1.07	1,337.77	-713.19	2,346.70	2,319.06	27.85	84.883	
12,200.00	10,631.86	8,602.00	8,313.93	41.24	10.28	-0.99	1,350.44	-711.65	2,364.80	2,336.74	28.05	84.296	
12,300.00	10,632.81	8,570.00	8,307.68	42.90	9.77	-0.82	1,381.59	-707.69	2,385.91	2,357.54	28.37	84.098	
12,400.00	10,633.76	8,539.00	8,300.35	44.38	9.29	-0.66	1,411.53	-704.45	2,410.22	2,381.50	28.72	83.930	
12,500.00	10,634.71	8,522.10	8,295.87	45.98	9.03	-0.57	1,427.74	-702.88	2,437.35	2,408.19	29.18	83.588	
12,600.00	10,635.66	8,507.00	8,291.64	47.80	8.79	-0.50	1,442.17	-701.46	2,467.38	2,437.74	29.82	83.294	
12,700.00	10,636.62	8,478.00	8,282.07	49.24	8.31	-0.34	1,471.46	-698.07	2,500.09	2,470.05	30.04	83.232	
12,800.00	10,637.57	8,476.00	8,282.07	50.90	8.31	-0.34	1,471.46	-698.07	2,535.97	2,505.37	30.60	82.876	
12,900.00	10,638.52	8,444.00	8,270.39	52.57	7.84	-0.16	1,500.96	-693.97	2,574.53	2,543.48	31.05	82.908	
13,000.00	10,639.47	8,444.00	8,270.39	54.25	7.84	-0.16	1,500.96	-693.97	2,615.95	2,584.31	31.83	82.894	
13,100.00	10,640.42	8,427.58	8,263.54	55.95	7.60	-0.07	1,515.72	-691.77	2,660.11	2,627.94	32.17	82.890	
13,200.00	10,641.37	8,413.00	8,256.98	57.65	7.39	0.01	1,528.58	-689.74	2,706.90	2,674.18	32.72	82.731	
13,300.00	10,642.33	8,413.00	8,256.98	59.37	7.39	0.01	1,528.58	-689.74	2,756.25	2,722.92	33.32	82.711	
13,400.00	10,643.28	8,381.00	8,241.35	61.09	6.95	0.19	1,556.09	-685.00	2,807.67	2,773.84	33.83	82.994	
13,500.00	10,644.23	8,381.00	8,241.35	62.83	6.95	0.19	1,556.09	-685.00	2,861.34	2,826.89	34.45	83.064	
13,600.00	10,645.18	8,350.00	8,225.13	64.57	6.55	0.38	1,582.01	-679.87	2,916.78	2,881.79	34.97	83.404	
13,700.00	10,646.13	8,331.10	8,214.90	66.32	6.31	0.50	1,597.49	-676.27	2,974.07	2,938.52	35.55	83.663	
13,800.00	10,647.09	8,318.00	8,207.87	68.07	6.15	0.59	1,608.03	-673.42	3,033.17	2,997.02	36.15	83.914	
13,900.00	10,648.04	8,300.36	8,197.71	69.83	5.93	0.72	1,621.96	-669.22	3,093.97	3,057.22	36.75	84.189	
14,000.00	10,648.99	8,287.00	8,189.98	71.60	5.76	0.83	1,632.32	-665.83	3,156.45	3,119.09	37.37	84.488	
14,100.00	10,649.94	8,287.00	8,189.98	73.37	5.76	0.83	1,632.32	-665.83	3,220.68	3,182.87	38.02	84.719	
14,200.00	10,650.89	8,255.00	8,170.52	75.15	5.38	1.07	1,656.34	-657.55	3,286.34	3,247.71	38.83	85.072	
14,300.00	10,651.85	8,255.00	8,170.52	76.93	5.38	1.07	1,656.34	-657.55	3,353.36	3,314.08	39.29	85.359	

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
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 3H (offset) - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 135- VES GyroFlex V2, 7720-MWD-ISCWSA													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	
14,400.00	10,652.80	8,255.00	8,170.52	78.72	5.38	1.07	1,856.34	-457.55	3,422.00	3,382.05	39.94	85.670	
14,500.00	10,653.75	8,238.88	8,160.16	80.50	5.20	1.19	1,867.86	-453.38	3,491.84	3,451.24	40.59	86.018	
14,600.00	10,654.70	8,224.00	8,150.24	82.30	5.04	1.30	1,878.34	-449.49	3,563.09	3,521.84	41.25	86.379	
14,700.00	10,655.65	8,224.00	8,150.24	84.09	5.04	1.30	1,878.34	-449.49	3,635.45	3,593.53	41.92	86.728	
14,800.00	10,656.61	8,224.00	8,150.24	85.89	5.04	1.30	1,878.34	-449.49	3,709.09	3,666.50	42.59	87.091	
14,900.00	10,657.56	8,207.14	8,138.63	87.70	4.87	1.42	1,889.74	-445.07	3,783.84	3,740.39	43.25	87.482	
15,000.00	10,658.51	8,192.00	8,127.89	89.50	4.72	1.53	1,899.65	-441.09	3,859.35	3,815.43	43.92	87.878	
15,100.00	10,659.46	8,192.00	8,127.89	91.31	4.72	1.53	1,899.65	-441.09	3,935.92	3,891.32	44.60	88.258	
15,156.59	10,660.00	8,192.00	8,127.89	92.14	4.72	1.53	1,899.65	-441.09	3,979.70	3,934.91	44.79	88.854	



LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 4H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 100-MWD-ISCWSA, 4880-MWD-ISCWSA													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	
0.00	0.00	1.98	1.98	0.00	0.00	-32.11	2,096.84	-1,315.54	2,475.19				
100.00	100.00	112.15	112.15	0.09	0.11	-32.12	2,096.24	-1,315.74	2,474.98	2,474.78	0.20	N/A	
200.00	200.00	222.31	222.30	0.31	0.35	-32.13	2,095.23	-1,316.00	2,474.32	2,473.66	0.66	3,736.132	
300.00	300.00	320.76	320.75	0.54	0.55	-32.14	2,094.33	-1,315.85	2,473.47	2,472.38	1.09	2,270.455	
400.00	400.00	408.68	408.66	0.76	0.73	-32.14	2,093.92	-1,315.66	2,472.95	2,471.46	1.49	1,860.225	
474.28	474.28	476.07	476.06	0.93	0.87	-32.15	2,093.76	-1,315.73	2,472.85	2,471.08	1.79	1,378.447	
500.00	500.00	500.00	499.99	0.98	0.92	-32.15	2,093.71	-1,315.83	2,472.86	2,470.98	1.90	1,301.079	
600.00	600.00	604.06	604.05	1.21	1.13	-32.15	2,093.83	-1,315.96	2,472.86	2,470.52	2.34	1,056.449	
674.40	674.40	678.21	676.20	1.38	1.29	-32.15	2,093.71	-1,315.77	2,472.83	2,470.16	2.86	928.881	
700.00	700.00	700.00	699.99	1.43	1.34	-32.14	2,093.78	-1,315.70	2,472.83	2,470.08	2.77	892.531	
800.00	800.00	795.32	795.30	1.66	1.54	-32.14	2,093.93	-1,315.89	2,472.98	2,469.78	3.19	774.048	
900.00	900.00	897.58	897.55	1.88	1.75	-32.14	2,094.17	-1,315.73	2,473.20	2,469.57	3.83	680.830	
1,000.00	1,000.00	1,004.33	1,004.31	2.11	1.97	-32.13	2,094.38	-1,315.45	2,473.23	2,469.15	4.08	605.890	
1,064.13	1,064.13	1,065.94	1,065.93	2.25	2.10	-32.13	2,094.40	-1,315.38	2,473.20	2,468.84	4.35	568.039	
1,100.00	1,100.00	1,100.00	1,099.99	2.33	2.17	-32.13	2,094.39	-1,315.40	2,473.21	2,468.70	4.51	548.967	
1,200.00	1,200.00	1,195.23	1,195.22	2.56	2.37	-32.13	2,094.52	-1,315.49	2,473.37	2,468.44	4.93	501.766	
1,300.00	1,300.00	1,303.78	1,303.77	2.78	2.60	-32.13	2,094.82	-1,315.53	2,473.47	2,468.08	5.38	459.831	
1,330.76	1,330.76	1,332.87	1,332.86	2.85	2.66	-32.13	2,094.59	-1,315.55	2,473.45	2,467.94	5.51	448.787	
1,400.00	1,400.00	1,400.00	1,399.98	3.01	2.80	-32.13	2,094.57	-1,315.87	2,473.50	2,467.69	5.81	425.924	
1,500.00	1,500.00	1,500.00	1,499.98	3.23	3.01	-32.14	2,094.58	-1,315.74	2,473.55	2,467.31	6.24	396.287	
1,600.00	1,600.00	1,593.82	1,593.80	3.46	3.21	-32.14	2,094.88	-1,315.83	2,473.70	2,467.03	6.66	371.243	
1,700.00	1,700.00	1,700.00	1,699.98	3.68	3.43	-32.14	2,094.73	-1,315.87	2,473.75	2,466.64	7.11	347.908	
1,746.31	1,746.31	1,746.81	1,746.59	3.79	3.53	-32.14	2,094.71	-1,315.81	2,473.70	2,466.39	7.31	338.306	
1,800.00	1,800.00	1,792.41	1,792.39	3.91	3.62	-32.14	2,094.77	-1,315.82	2,473.82	2,466.29	7.53	328.591	
1,900.00	1,900.00	1,901.25	1,901.23	4.13	3.85	-32.14	2,095.01	-1,316.02	2,474.06	2,466.08	7.98	309.973	
2,000.00	2,000.00	2,007.18	2,007.16	4.36	4.07	-32.13	2,094.99	-1,315.80	2,473.93	2,465.50	8.43	293.547	
2,028.84	2,028.84	2,032.14	2,032.13	4.42	4.12	-32.13	2,094.96	-1,315.78	2,473.89	2,465.35	8.54	289.521	
2,100.00	2,100.00	2,100.00	2,099.98	4.58	4.27	-32.13	2,095.05	-1,315.83	2,474.00	2,465.15	8.85	279.851	
2,200.00	2,200.00	2,200.00	2,199.98	4.81	4.48	-32.13	2,095.28	-1,315.84	2,474.19	2,464.91	9.28	266.585	
2,300.00	2,300.00	2,293.11	2,293.09	5.03	4.67	-32.12	2,095.53	-1,315.76	2,474.38	2,464.68	9.70	255.063	
2,400.00	2,400.00	2,399.45	2,399.43	5.26	4.89	-32.12	2,095.90	-1,315.66	2,474.63	2,464.48	10.15	243.836	
2,500.00	2,500.00	2,492.17	2,492.15	5.48	5.09	-32.11	2,096.21	-1,315.59	2,474.87	2,464.30	10.57	234.195	
2,600.00	2,600.00	2,598.49	2,598.47	5.71	5.31	-32.11	2,096.60	-1,315.54	2,475.15	2,464.14	11.02	224.706	
2,700.00	2,700.00	2,699.38	2,699.36	5.93	5.52	-32.10	2,096.84	-1,315.37	2,475.27	2,463.82	11.45	216.188	
2,800.00	2,800.00	2,798.85	2,798.83	6.15	5.73	-32.09	2,097.08	-1,315.20	2,475.38	2,463.49	11.88	208.297	
2,900.00	2,900.00	2,897.13	2,897.11	6.38	5.94	-32.09	2,097.30	-1,315.14	2,475.53	2,463.22	12.31	201.026	
3,000.00	3,000.00	2,997.07	2,997.05	6.60	6.14	-32.09	2,097.53	-1,315.12	2,475.72	2,462.97	12.75	194.196	
3,100.00	3,100.00	3,103.08	3,103.06	6.83	6.37	-32.09	2,097.59	-1,315.18	2,475.80	2,462.60	13.20	187.629	
3,190.58	3,190.58	3,196.84	3,196.82	7.03	6.56	-32.09	2,097.35	-1,315.36	2,475.69	2,462.10	13.59	182.105	
3,200.00	3,200.00	3,200.00	3,199.98	7.05	6.57	-32.09	2,097.34	-1,315.37	2,475.69	2,462.08	13.62	181.727	
3,300.00	3,300.00	3,292.91	3,292.89	7.28	6.78	-32.10	2,097.34	-1,315.53	2,475.79	2,461.74	14.04	176.303	
3,400.00	3,400.00	3,408.58	3,408.56	7.50	7.01	-32.09	2,097.48	-1,315.39	2,475.83	2,461.31	14.51	170.825	
3,463.75	3,463.75	3,465.57	3,465.55	7.65	7.13	-32.09	2,097.44	-1,315.30	2,475.74	2,460.97	14.77	167.587	
3,500.00	3,500.00	3,500.00	3,499.98	7.73	7.20	-32.09	2,097.44	-1,315.38	2,475.77	2,460.84	14.93	165.865	
3,600.00	3,600.00	3,606.20	3,606.18	7.95	7.43	-32.08	2,097.33	-1,315.28	2,475.65	2,460.27	15.38	160.967	
3,638.61	3,638.61	3,641.94	3,641.92	8.04	7.50	-32.09	2,097.32	-1,315.20	2,475.58	2,460.04	15.54	159.353	
3,700.00	3,700.00	3,700.00	3,699.98	8.18	7.62	-32.09	2,097.40	-1,315.23	2,475.66	2,459.87	15.79	156.739	
3,800.00	3,800.00	3,800.00	3,799.98	8.40	7.83	-32.10	2,097.36	-1,315.44	2,475.74	2,459.51	16.23	152.554	
3,900.00	3,900.00	3,891.57	3,891.55	8.63	8.02	-32.10	2,097.35	-1,315.63	2,475.86	2,459.21	16.65	148.743	
4,000.00	4,000.00	3,997.18	3,997.16	8.85	8.24	-32.10	2,097.71	-1,315.73	2,476.20	2,459.11	17.09	144.878	
4,100.00	4,100.00	4,106.35	4,106.32	9.08	8.47	-32.09	2,097.86	-1,315.45	2,476.18	2,458.63	17.55	141.123	
4,167.30	4,167.30	4,169.12	4,169.10	9.23	8.60	-32.09	2,097.87	-1,315.33	2,476.12	2,458.29	17.83	138.883	

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
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 4H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 100-MWD-ISCWSA, 4880-MWD-ISCWSA													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
4,200.00	4,200.00	4,200.00	4,199.97	9.30	8.87	-32.09	2,097.88	-1,315.34	2,476.13	2,458.16	17.97	137.817	
4,300.00	4,300.00	4,300.00	4,299.97	9.53	8.87	-32.09	2,097.94	-1,315.39	2,476.21	2,457.81	18.40	134.670	
4,400.00	4,400.00	4,395.40	4,395.37	9.75	9.08	-32.08	2,098.20	-1,315.40	2,476.44	2,457.62	18.83	131.543	
4,500.00	4,500.00	4,499.13	4,499.10	9.98	9.29	-32.08	2,098.48	-1,315.31	2,476.63	2,457.38	19.27	128.530	
4,600.00	4,600.00	4,597.89	4,597.86	10.19	9.50	57.95	2,098.65	-1,315.13	2,476.21	2,458.52	19.89	125.761	
4,700.00	4,699.96	4,680.00	4,679.97	10.38	9.67	57.98	2,098.80	-1,316.01	2,475.51	2,455.44	20.06	123.383	
4,800.00	4,799.86	4,739.74	4,739.88	10.58	9.73	58.00	2,098.95	-1,317.89	2,475.00	2,454.67	20.33	121.749	
4,857.23	4,857.00	4,776.00	4,775.89	10.70	9.77	58.01	2,099.08	-1,319.68	2,474.92	2,454.44	20.48	120.824	
4,900.00	4,899.86	4,806.81	4,806.84	10.79	9.78	58.01	2,099.19	-1,321.54	2,474.95	2,454.37	20.57	120.299	
5,000.00	4,999.37	4,871.00	4,870.83	10.99	9.78	58.01	2,099.39	-1,326.60	2,475.27	2,454.48	20.78	119.094	
5,100.00	5,098.99	4,942.07	4,941.30	11.20	9.79	57.99	2,099.50	-1,334.12	2,478.43	2,455.42	21.01	117.894	
5,200.00	5,198.80	5,021.00	5,019.51	11.42	9.81	57.91	2,099.30	-1,344.80	2,478.77	2,457.53	21.24	116.709	
5,300.00	5,298.22	5,103.75	5,101.19	11.63	9.84	57.78	2,098.45	-1,357.97	2,481.77	2,460.29	21.49	115.505	
5,400.00	5,397.84	5,188.41	5,184.84	11.85	9.88	57.82	2,097.48	-1,372.77	2,485.52	2,463.77	21.75	114.290	
5,500.00	5,497.46	5,283.83	5,278.38	12.07	9.94	57.44	2,096.42	-1,390.02	2,489.68	2,467.63	22.03	113.013	
5,600.00	5,597.08	5,385.26	5,378.12	12.29	10.02	57.23	2,095.24	-1,408.45	2,493.84	2,471.52	22.33	111.899	
5,700.00	5,696.70	5,489.71	5,480.87	12.52	10.10	57.03	2,094.04	-1,427.18	2,497.94	2,475.31	22.63	110.373	
5,800.00	5,796.32	5,575.24	5,565.03	12.75	10.18	56.87	2,093.11	-1,442.38	2,502.04	2,479.11	22.93	109.117	
5,900.00	5,895.94	5,648.82	5,637.26	12.97	10.26	56.75	2,093.33	-1,455.32	2,507.22	2,483.99	23.22	107.957	
6,000.00	5,995.56	5,742.23	5,729.37	13.20	10.37	56.59	2,094.20	-1,471.96	2,513.01	2,489.47	23.55	106.718	
6,100.00	6,095.18	5,843.59	5,829.11	13.44	10.50	56.43	2,095.13	-1,490.02	2,518.86	2,494.97	23.89	105.427	
6,200.00	6,194.80	5,940.39	5,924.33	13.67	10.64	56.27	2,095.98	-1,507.42	2,524.78	2,500.54	24.24	104.151	
6,300.00	6,294.42	6,042.18	6,024.46	13.90	10.79	56.10	2,096.94	-1,525.88	2,530.75	2,506.15	24.60	102.888	
6,400.00	6,394.04	6,147.88	6,128.53	14.14	10.96	55.94	2,098.02	-1,544.15	2,536.54	2,511.57	24.97	101.574	
6,500.00	6,493.66	10,067.17	8,290.96	14.38	38.26	2.78	74.79	-1,856.72	2,476.63	2,424.97	51.86	47.945	
6,600.00	6,593.28	10,068.28	8,290.97	14.62	38.28	2.74	73.88	-1,856.76	2,399.22	2,347.33	51.88	46.243	
6,700.00	6,692.90	10,069.50	8,290.99	14.86	38.30	2.69	72.46	-1,856.80	2,323.53	2,271.42	52.11	44.587	
6,800.00	6,792.52	10,070.85	8,291.00	15.10	38.32	2.64	71.11	-1,856.85	2,249.74	2,197.40	52.34	42.981	
6,900.00	6,892.14	10,072.35	8,291.01	15.34	38.34	2.59	69.82	-1,856.90	2,178.05	2,125.47	52.58	41.426	
7,000.00	6,991.76	10,074.03	8,291.03	15.59	38.37	2.52	67.94	-1,856.95	2,108.66	2,055.85	52.81	39.927	
7,100.00	7,091.37	10,075.91	8,291.06	15.83	38.40	2.45	66.06	-1,857.01	2,041.81	1,988.76	53.05	38.487	
7,200.00	7,190.99	10,078.05	8,291.08	16.08	38.43	2.37	63.93	-1,857.07	1,977.76	1,924.46	53.29	37.111	
7,300.00	7,290.61	10,080.48	8,291.12	16.32	38.47	2.28	61.49	-1,857.14	1,916.78	1,863.24	53.54	35.801	
7,400.00	7,390.23	10,083.30	8,291.16	16.57	38.52	2.18	58.68	-1,857.22	1,859.18	1,805.39	53.79	34.564	
7,500.00	7,489.85	10,086.58	8,291.22	16.82	38.57	2.06	55.40	-1,857.31	1,805.29	1,751.24	54.05	33.403	
7,600.00	7,589.47	10,090.45	8,291.30	17.07	38.63	1.91	51.53	-1,857.40	1,755.43	1,701.12	54.31	32.323	
7,700.00	7,689.09	10,095.10	8,291.40	17.32	38.70	1.74	46.88	-1,857.50	1,709.96	1,655.40	54.58	31.329	
7,800.00	7,788.71	10,100.77	8,291.54	17.57	38.79	1.63	41.21	-1,857.61	1,669.27	1,614.41	54.87	30.425	
7,900.00	7,888.33	10,105.00	8,291.65	17.82	38.86	1.37	36.98	-1,857.68	1,633.67	1,578.54	55.13	29.632	
8,000.00	7,987.95	10,105.00	8,291.65	18.07	38.86	1.37	36.98	-1,857.68	1,603.52	1,548.17	55.35	28.969	
8,100.00	8,087.57	10,105.00	8,291.65	18.30	38.86	1.37	36.98	-1,857.68	1,579.57	1,523.99	55.58	28.421	
8,200.00	8,187.13	10,105.00	8,291.65	18.51	38.86	1.37	36.98	-1,857.68	1,562.53	1,506.74	55.79	28.009	
8,300.00	8,287.12	10,105.00	8,291.65	18.72	38.86	1.37	36.98	-1,857.68	1,562.62	1,496.63	55.99	27.730	
8,385.88	8,372.85	10,105.00	8,291.65	18.89	38.86	1.37	36.98	-1,857.68	1,548.92	1,493.78	56.16	27.596 CC, ES	
8,400.00	8,386.96	10,105.00	8,291.65	18.92	38.86	1.37	36.98	-1,857.68	1,550.00	1,493.81	56.19	27.584	
8,500.00	8,486.84	10,105.00	8,291.65	19.12	38.86	1.37	36.98	-1,857.68	1,554.69	1,498.30	56.39	27.570 SF	
8,600.00	8,586.76	10,105.00	8,291.65	19.32	38.86	1.37	36.98	-1,857.68	1,566.63	1,510.04	56.59	27.686	
8,700.00	8,686.72	10,105.00	8,291.65	19.52	38.86	1.37	36.98	-1,857.68	1,565.65	1,528.87	56.78	27.928	
8,800.00	8,786.69	10,105.00	8,291.65	19.71	38.86	1.37	36.98	-1,857.68	1,611.50	1,554.54	56.96	28.290	
8,900.00	8,886.68	10,105.00	8,291.65	19.90	38.86	1.38	36.98	-1,857.68	1,643.66	1,586.71	57.15	28.765	
9,000.00	8,986.68	10,105.00	8,291.65	20.09	38.86	-88.62	36.98	-1,857.68	1,682.35	1,624.40	57.95	29.032	
9,100.00	9,086.68	10,105.00	8,291.65	20.28	38.86	-88.62	36.98	-1,857.68	1,726.17	1,668.02	58.15	29.684	

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
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 4H - OH - OH											Offset Site Error: 0.00 usft	
Survey Program: 100-MWD-ISCWSA, 4680-MWD-ISCWSA											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)
9,200.00	9,186.88	10,105.00	8,291.85	20.49	38.86	-88.82	36.98	-1,857.88	1,774.55	1,716.19	58.37	30.403
9,300.00	9,286.88	10,105.00	8,291.85	20.70	38.86	-88.82	36.98	-1,857.68	1,827.13	1,768.54	58.59	31.187
9,400.00	9,386.88	10,105.00	8,291.85	20.92	38.86	-88.82	36.98	-1,857.68	1,883.55	1,824.75	58.80	32.031
9,500.00	9,486.88	10,105.00	8,291.85	21.13	38.86	-88.82	36.98	-1,857.88	1,943.49	1,884.46	59.02	32.928
9,600.00	9,586.88	10,105.00	8,291.85	21.34	38.86	-88.82	36.98	-1,857.68	2,006.62	1,947.37	59.24	33.872
9,700.00	9,686.88	10,105.00	8,291.85	21.55	38.86	-88.82	36.98	-1,857.68	2,072.85	2,013.19	59.48	34.858
9,800.00	9,786.88	10,105.00	8,291.85	21.77	38.86	-88.82	36.98	-1,857.68	2,141.32	2,081.64	59.88	35.861
9,900.00	9,886.88	10,105.00	8,291.85	21.98	38.86	-88.82	36.98	-1,857.68	2,212.38	2,152.48	59.90	36.936
10,000.00	9,986.88	10,105.00	8,291.85	22.19	38.86	-88.82	36.98	-1,857.88	2,285.60	2,225.48	60.12	38.020
10,090.39	10,047.07	10,105.00	8,291.85	22.32	38.86	-88.82	36.98	-1,857.88	2,330.79	2,270.54	60.25	38.886
10,100.00	10,086.85	10,105.00	8,291.85	22.41	38.86	-78.04	36.98	-1,857.68	2,360.65	2,300.43	60.22	39.199
10,150.00	10,136.32	10,105.00	8,291.85	22.52	38.86	-72.54	36.98	-1,857.88	2,398.21	2,337.56	60.65	39.540
10,200.00	10,185.30	10,105.00	8,291.85	22.63	38.86	-67.32	36.98	-1,857.68	2,435.37	2,374.86	60.71	40.118
10,250.00	10,233.24	9,981.03	8,291.95	22.74	36.89	-58.85	180.80	-1,852.03	2,471.53	2,412.64	58.89	41.967
10,300.00	10,279.76	9,967.74	8,292.20	22.86	36.87	-54.48	174.06	-1,851.23	2,506.17	2,447.75	58.42	42.899
10,350.00	10,324.51	9,951.79	8,292.47	22.97	36.41	-50.57	189.98	-1,850.31	2,539.36	2,481.73	57.63	44.065
10,400.00	10,367.14	9,933.33	8,292.74	23.09	36.11	-47.13	208.41	-1,849.29	2,570.84	2,514.27	56.56	45.449
10,450.00	10,407.34	9,915.00	8,292.99	23.22	35.82	-44.17	226.71	-1,848.32	2,600.37	2,545.04	55.33	46.998
10,500.00	10,444.80	9,891.48	8,293.21	23.36	35.44	-41.57	250.20	-1,847.12	2,627.72	2,573.84	53.88	48.770
10,550.00	10,479.23	9,868.54	8,293.30	23.51	35.06	-39.38	273.11	-1,845.97	2,652.89	2,600.33	52.36	50.861
10,600.00	10,510.37	9,844.01	8,293.27	23.68	34.67	-37.52	297.81	-1,844.77	2,675.09	2,624.31	50.78	52.679
10,650.00	10,537.99	9,820.00	8,293.10	23.87	34.28	-35.99	321.59	-1,843.62	2,694.75	2,645.53	49.21	54.755
10,700.00	10,561.87	9,787.50	8,292.70	24.10	33.77	-34.66	354.06	-1,842.10	2,711.48	2,663.90	47.58	56.990
10,750.00	10,581.83	9,755.90	8,292.16	24.35	33.28	-33.82	385.81	-1,840.68	2,726.12	2,679.08	46.05	59.180
10,800.00	10,597.73	9,720.29	8,291.38	24.64	32.72	-32.80	421.19	-1,839.12	2,736.57	2,690.97	44.60	61.340
10,850.00	10,609.43	9,625.76	8,289.24	24.95	31.32	-31.90	515.54	-1,833.76	2,742.17	2,699.56	42.60	64.368
10,900.00	10,616.85	9,481.78	8,289.77	25.30	29.24	-31.14	659.15	-1,823.64	2,743.40	2,703.06	40.34	68.008
10,954.94	10,620.00	9,439.00	8,290.74	25.71	28.61	-31.15	701.81	-1,820.57	2,739.97	2,700.47	39.50	69.358
11,000.00	10,620.43	9,439.00	8,290.74	26.07	28.61	-31.15	701.81	-1,820.57	2,735.95	2,696.25	39.71	68.905
11,100.00	10,621.38	9,374.68	8,291.17	26.94	27.68	-30.95	765.88	-1,816.30	2,727.89	2,688.18	39.51	69.037
11,200.00	10,622.34	9,320.62	8,289.84	27.92	26.92	-30.77	819.94	-1,813.23	2,721.99	2,682.51	39.49	68.833
11,300.00	10,623.29	9,124.00	8,288.95	28.98	24.22	-30.17	1,016.25	-1,802.74	2,714.93	2,676.85	38.08	71.294
11,400.00	10,624.24	9,059.00	8,289.17	30.13	23.30	-29.98	1,081.14	-1,799.11	2,707.19	2,669.15	38.04	71.168
11,500.00	10,625.19	9,003.31	8,288.74	31.34	22.60	-29.81	1,136.77	-1,796.51	2,700.89	2,662.72	38.17	70.753
11,600.00	10,626.14	8,923.37	8,287.66	32.62	21.59	-29.58	1,216.66	-1,793.73	2,695.83	2,657.71	38.12	70.720
11,700.00	10,627.10	8,840.16	8,286.41	33.85	20.54	-29.35	1,299.81	-1,790.98	2,691.11	2,653.04	38.06	70.700
11,800.00	10,628.05	8,774.00	8,284.42	35.33	19.89	-29.15	1,365.90	-1,786.73	2,687.65	2,649.47	38.18	70.393
11,900.00	10,629.00	8,716.47	8,281.74	36.76	19.00	-28.96	1,423.33	-1,786.73	2,685.82	2,647.19	38.42	69.899
12,000.00	10,629.95	8,647.00	8,277.38	38.22	18.19	-28.73	1,492.82	-1,784.16	2,685.00	2,646.39	38.57	69.609
12,004.02	10,629.99	8,647.00	8,277.38	38.28	18.19	-28.73	1,492.82	-1,784.16	2,685.00	2,646.39	38.61	69.549
12,100.00	10,630.90	8,616.00	8,274.92	39.72	17.85	-28.61	1,523.49	-1,782.88	2,686.02	2,646.91	39.11	68.878
12,200.00	10,631.86	8,584.00	8,271.48	41.24	17.52	-28.49	1,555.27	-1,781.48	2,689.57	2,648.91	39.66	67.823
12,300.00	10,632.81	8,568.00	8,269.32	42.80	17.35	-28.42	1,571.11	-1,780.77	2,695.98	2,655.62	40.37	66.788
12,400.00	10,633.76	8,538.00	8,264.13	44.38	17.05	-28.28	1,600.82	-1,779.42	2,705.31	2,664.35	40.98	66.052
12,500.00	10,634.71	8,538.00	8,264.13	45.98	17.05	-28.28	1,600.82	-1,779.42	2,717.82	2,675.98	41.85	64.948
12,600.00	10,635.66	8,507.00	8,256.71	47.60	16.76	-28.11	1,630.68	-1,777.87	2,733.27	2,690.82	42.45	64.395
12,700.00	10,636.62	8,507.00	8,256.71	49.24	16.76	-28.11	1,630.68	-1,777.87	2,751.85	2,708.49	43.36	63.469
12,800.00	10,637.57	8,475.00	8,246.76	50.90	16.48	-27.92	1,661.03	-1,776.17	2,773.51	2,729.55	43.96	63.097
12,900.00	10,638.52	8,475.00	8,246.76	52.57	16.48	-27.92	1,661.03	-1,776.17	2,797.91	2,753.02	44.89	62.332
13,000.00	10,639.47	8,444.00	8,235.12	54.25	16.22	-27.71	1,689.71	-1,774.45	2,825.45	2,779.95	45.50	62.093
13,100.00	10,640.42	8,444.00	8,235.12	55.95	16.22	-27.71	1,689.71	-1,774.45	2,855.43	2,808.98	46.45	61.475
13,200.00	10,641.37	8,425.22	8,227.26	57.65	16.07	-27.58	1,706.73	-1,773.35	2,888.21	2,841.01	47.20	61.189

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

Company: DEVON ENERGY
 Project: Lea County, NM (NAD-83)
 Reference Site: Chincoteague 32 State Corn
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
 TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
 MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design Cotton Draw 32 State - 4H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 100-MWD-ISCWSA, 4880-MWD-ISCWSA												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	
13,300.00	10,642.33	8,412.00	8,221.38	59.37	15.97	-27.48	1,718.54	-1,772.58	2,923.59	2,875.57	48.01	60.890	
13,400.00	10,643.28	8,380.00	8,206.11	81.09	15.74	-27.24	1,746.58	-1,770.48	2,961.55	2,912.92	48.62	60.906	
13,500.00	10,644.23	8,380.00	8,206.11	82.83	15.74	-27.24	1,746.58	-1,770.48	3,001.85	2,952.08	49.59	60.530	
13,600.00	10,645.18	8,348.00	8,189.45	64.57	15.53	-26.98	1,773.81	-1,768.24	3,044.27	2,994.07	50.20	60.848	
13,700.00	10,646.13	8,348.00	8,189.45	66.32	15.53	-26.98	1,773.81	-1,768.24	3,086.91	3,037.74	51.17	60.367	
13,800.00	10,647.09	8,317.00	8,172.19	68.07	15.34	-26.72	1,799.48	-1,785.99	3,135.77	3,083.98	51.79	60.552	
13,900.00	10,648.04	8,304.92	8,165.22	69.83	15.26	-26.62	1,809.28	-1,785.05	3,184.54	3,131.91	52.62	60.518	
14,000.00	10,648.99	8,285.00	8,153.45	71.60	15.15	-26.45	1,825.28	-1,783.40	3,235.21	3,181.84	53.36	60.627	
14,100.00	10,649.94	8,253.00	8,133.85	73.37	14.98	-26.16	1,850.38	-1,780.39	3,287.74	3,233.78	53.96	60.933	
14,200.00	10,650.89	8,253.00	8,133.85	75.15	14.98	-26.16	1,850.38	-1,780.39	3,341.87	3,286.93	54.93	60.835	
14,300.00	10,651.85	8,222.00	8,113.97	76.93	14.82	-25.88	1,873.94	-1,757.13	3,397.84	3,342.30	55.53	61.186	
14,400.00	10,652.80	8,222.00	8,113.97	78.72	14.82	-25.88	1,873.94	-1,757.13	3,455.37	3,398.85	56.51	61.144	
14,500.00	10,653.75	8,205.95	8,103.30	80.50	14.75	-25.73	1,885.80	-1,755.43	3,514.59	3,457.30	57.29	61.344	
14,600.00	10,654.70	8,190.00	8,092.44	82.30	14.68	-25.58	1,897.38	-1,753.81	3,575.40	3,517.33	58.07	61.586	
14,700.00	10,655.65	8,190.00	8,092.44	84.09	14.68	-25.58	1,897.38	-1,753.81	3,637.75	3,578.89	59.06	61.599	
14,800.00	10,656.61	8,159.00	8,070.74	85.89	14.56	-25.29	1,919.33	-1,750.98	3,701.41	3,641.78	59.85	62.049	
14,900.00	10,657.56	8,159.00	8,070.74	87.70	14.56	-25.29	1,919.33	-1,750.98	3,768.42	3,705.78	60.83	62.117	
15,000.00	10,658.51	8,144.12	8,060.05	89.50	14.51	-25.16	1,929.81	-1,749.82	3,832.75	3,771.31	61.43	62.388	
15,100.00	10,659.46	8,127.00	8,047.49	91.31	14.45	-25.01	1,941.19	-1,748.84	3,900.38	3,838.18	62.21	62.701	
15,158.59	10,660.00	8,127.00	8,047.49	92.14	14.45	-25.01	1,941.19	-1,748.84	3,938.13	3,876.55	62.58	62.943	



LEAM Drilling Systems LLC
Anticollision Report

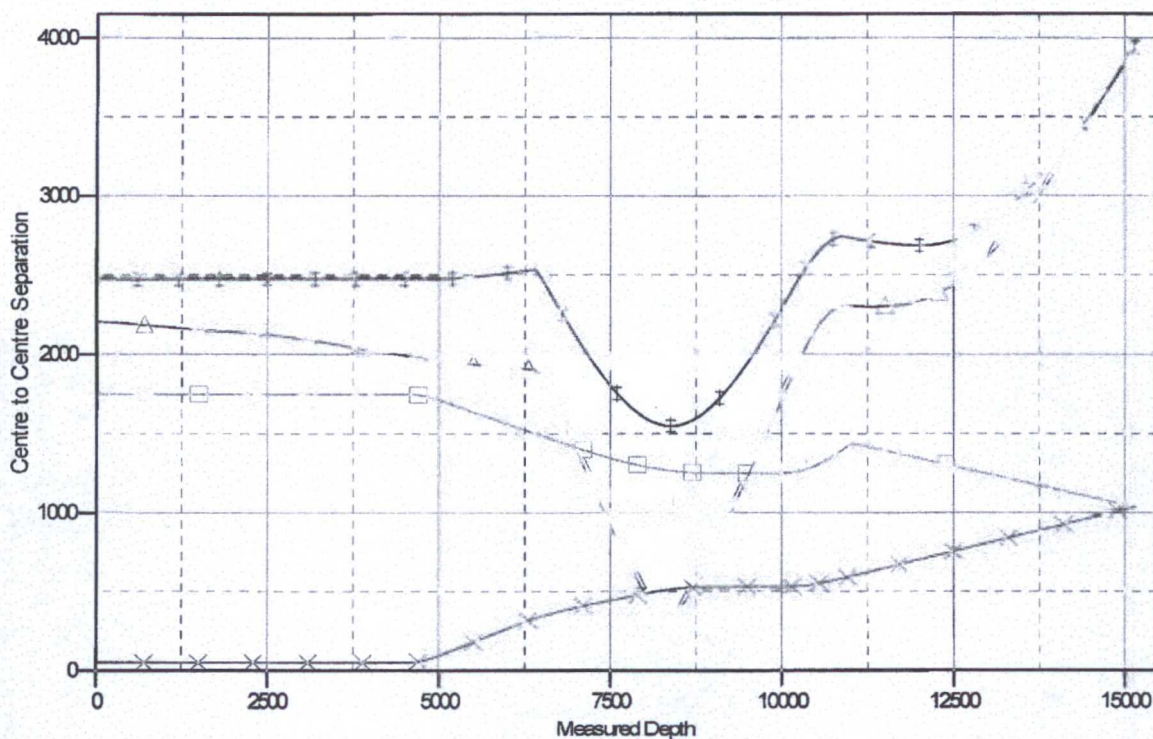


Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 3H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3471.2' GE + 23.5' RKB @ 3494.70usft
Reference Site:	Chincoteague 32 State Corn	MD Reference:	3471.2' GE + 23.5' RKB @ 3494.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	3H	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:	Prelim 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3471.2' GE + 23.5' RKB @ 3494.70us
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 3H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.34°

Ladder Plot



LEGEND

- 3H (offset), OH, OH V0
- 2H, OH, Plan #1 V0
- 4H, OH, OH V0
- 4H, OH, Plan #1 V0



LEAM Drilling Systems LLC
Anticollision Report



Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Chincoteague 32 State Com
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Prelim 1

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3471.2' GE + 23.5' RKB @ 3494.70us
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 3H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.34°

