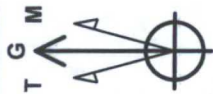
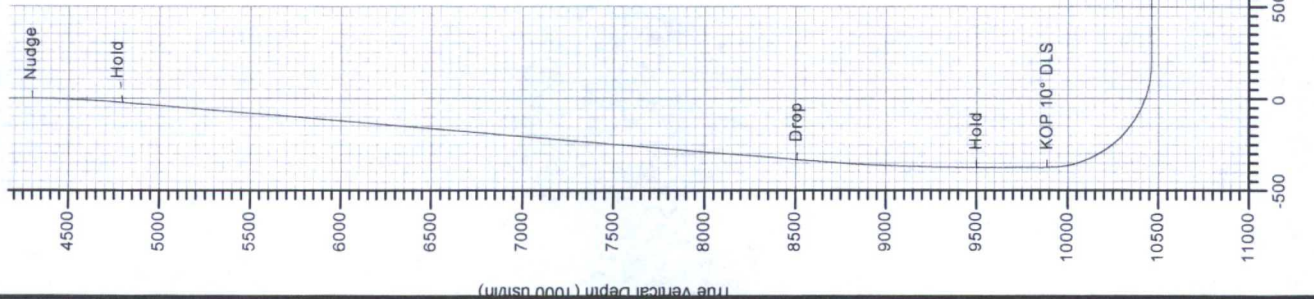




Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 453H (SIMOPS)
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.33°
Magnetic North: 6.95°
Magnetic Field
Strength: 48101.2snT
Dip Angle: 60.03°
Date: 12/16/2015
Model: BGGM2015



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
SHL (CDU 453H)	0.00	0.00	0.00	414943.32	734339.98
PBHL (CDU 453H)	10448.00	4348.12	-97.23	419291.44	734242.75

SECTION DETAILS

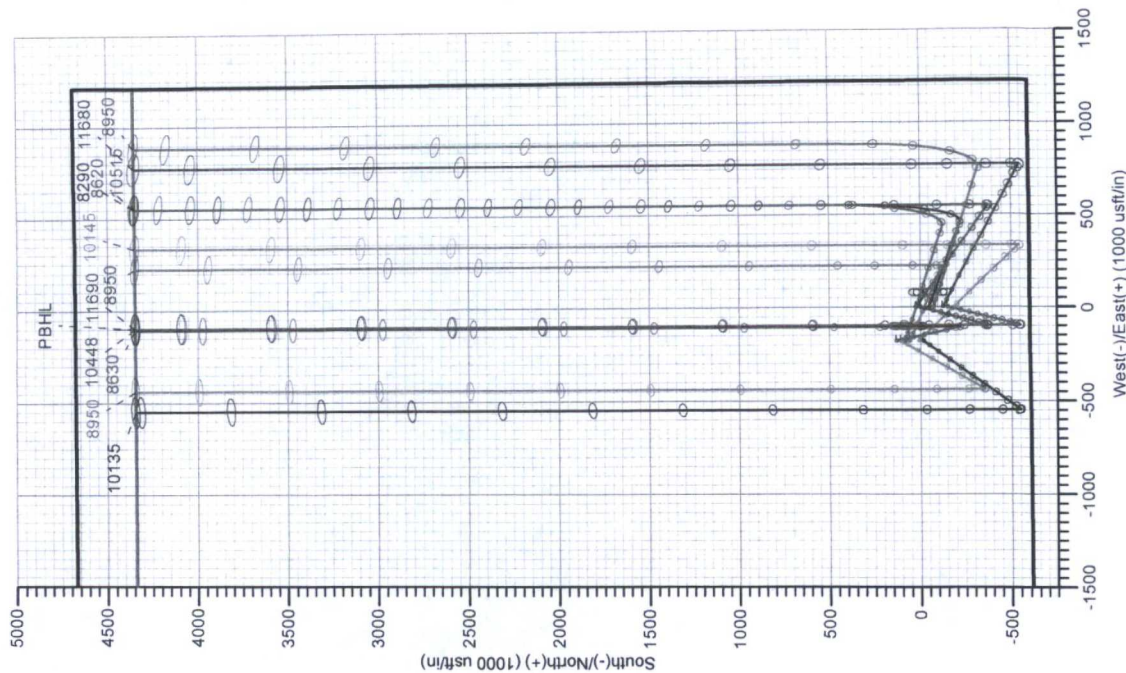
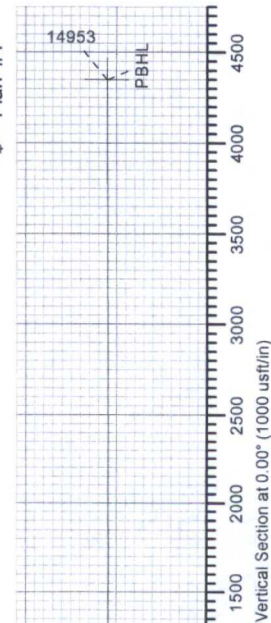
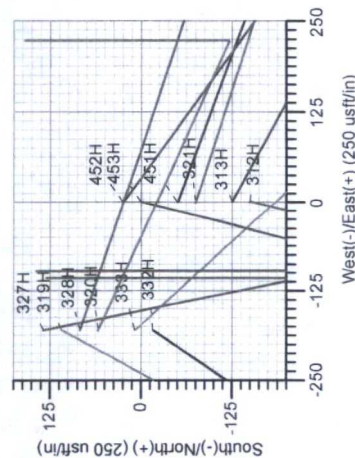
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00
4796.04	4.96	194.60	4795.42	-20.77	-5.41	1.00	194.60	-20.77
8523.73	4.96	194.60	8509.15	-332.68	-86.68	0.00	0.00	-332.69
9515.82	0.00	0.00	9500.00	-374.21	-97.50	0.50	180.00	-374.22
9903.87	0.00	0.00	9888.05	-374.21	-97.50	0.00	0.00	-374.22
10805.67	90.18	0.00	10461.00	200.54	-97.47	10.00	0.00	200.54
14953.26	90.18	0.00	10448.00	4348.12	-97.23	0.00	0.00	4348.11

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

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

LEGEND

- ✕ 327H (SIMOPS), OH, Plan #1 V0
- △ 320H (SIMOPS), OH, Plan #1 V0
- 451H (SIMOPS), OH, Plan #1 V0
- ⊥ 312H (SIMOPS), OH, Plan #1 V0
- 313H (SIMOPS), OH, Plan #1 V0
- 452H (SIMOPS), OH, Plan #1 V0
- 321H (SIMOPS), OH, Plan #1 V0
- 333H (SIMOPS), OH, Plan #1 V0
- ◇ 319H (SIMOPS), OH, Plan #1 V0
- ✕ 332H (SIMOPS), OH, Plan #1 V0
- △ 328H (SIMOPS), OH, Plan #1 V0
- ⊥ Plan #1





DEVON ENERGY

Lea County, NM (NAD-83)
Cotton Draw Unit
453H (SIMOPS)

OH

Plan: Plan #1

Standard Planning Report

02 February, 2016





LEAM Drilling Systems LLC
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Company:	DEVON ENERGY	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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

Site	Cotton Draw Unit				
Site Position:		Northing:	414,142.25 usft	Latitude:	32° 8' 13.293 N
From:	Map	Easting:	733,967.43 usft	Longitude:	103° 42' 39.602 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.33 °

Well	453H (SIMOPS)					
Well Position	+N/-S	801.07 usft	Northing:	414,943.32 usft	Latitude:	32° 8' 21.199 N
	+E/-W	372.55 usft	Easting:	734,339.98 usft	Longitude:	103° 42' 35.215 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,461.40 usft	Ground Level:	3,431.40 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	12/16/2015	7.29	60.03	48,101

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.01

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	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,796.04	4.96	194.60	4,795.42	-20.77	-5.41	1.00	1.00	0.00	194.60	
8,523.73	4.96	194.60	8,509.15	-332.68	-86.68	0.00	0.00	0.00	0.00	
9,515.82	0.00	0.00	9,500.00	-374.21	-97.50	0.50	-0.50	0.00	180.00	
9,903.87	0.00	0.00	9,888.05	-374.21	-97.50	0.00	0.00	0.00	0.00	
10,805.67	90.18	0.00	10,461.01	200.54	-97.47	10.00	10.00	0.00	0.00	
14,953.26	90.18	0.00	10,448.00	4,348.12	-97.23	0.00	0.00	0.00	0.00	PBHL (CDU 453H)



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 453H (SIMOPS)
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 453H (SIMOPS)
TVD Reference: 3431.4' GE + 30' KB @ 3461.40usft
MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
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 (CDU 453H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,805.67	0.00	0.00	1,805.67	0.00	0.00	0.00	0.00	0.00	0.00
LP									
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
Nudge									
4,400.00	1.00	194.60	4,400.00	-0.84	-0.22	-0.84	1.00	1.00	0.00
4,500.00	2.00	194.60	4,499.96	-3.38	-0.88	-3.38	1.00	1.00	0.00
4,600.00	3.00	194.60	4,599.86	-7.60	-1.98	-7.60	1.00	1.00	0.00
4,700.00	4.00	194.60	4,699.68	-13.51	-3.52	-13.51	1.00	1.00	0.00
4,796.04	4.96	194.60	4,795.42	-20.77	-5.41	-20.77	1.00	1.00	0.00
Hold									



LEAM Drilling Systems LLC

Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 453H (SIMOPS)
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 453H (SIMOPS)
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MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
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)
4,800.00	4.96	194.60	4,799.37	-21.10	-5.50	-21.10	0.00	0.00	0.00
4,900.00	4.96	194.60	4,898.99	-29.46	-7.68	-29.47	0.00	0.00	0.00
5,000.00	4.96	194.60	4,998.62	-37.83	-9.86	-37.83	0.00	0.00	0.00
5,100.00	4.96	194.60	5,098.24	-46.20	-12.04	-46.20	0.00	0.00	0.00
5,200.00	4.96	194.60	5,197.87	-54.57	-14.22	-54.57	0.00	0.00	0.00
5,300.00	4.96	194.60	5,297.49	-62.93	-16.40	-62.94	0.00	0.00	0.00
5,400.00	4.96	194.60	5,397.12	-71.30	-18.58	-71.30	0.00	0.00	0.00
5,500.00	4.96	194.60	5,496.74	-79.67	-20.76	-79.67	0.00	0.00	0.00
5,600.00	4.96	194.60	5,596.37	-88.04	-22.94	-88.04	0.00	0.00	0.00
5,700.00	4.96	194.60	5,696.00	-96.40	-25.12	-96.41	0.00	0.00	0.00
5,800.00	4.96	194.60	5,795.62	-104.77	-27.30	-104.77	0.00	0.00	0.00
5,900.00	4.96	194.60	5,895.25	-113.14	-29.48	-113.14	0.00	0.00	0.00
6,000.00	4.96	194.60	5,994.87	-121.51	-31.66	-121.51	0.00	0.00	0.00
6,100.00	4.96	194.60	6,094.50	-129.87	-33.84	-129.88	0.00	0.00	0.00
6,200.00	4.96	194.60	6,194.12	-138.24	-36.02	-138.24	0.00	0.00	0.00
6,300.00	4.96	194.60	6,293.75	-146.61	-38.20	-146.61	0.00	0.00	0.00
6,400.00	4.96	194.60	6,393.37	-154.98	-40.38	-154.98	0.00	0.00	0.00
6,500.00	4.96	194.60	6,493.00	-163.34	-42.56	-163.35	0.00	0.00	0.00
6,600.00	4.96	194.60	6,592.62	-171.71	-44.74	-171.71	0.00	0.00	0.00
6,700.00	4.96	194.60	6,692.25	-180.08	-46.92	-180.08	0.00	0.00	0.00
6,800.00	4.96	194.60	6,791.88	-188.45	-49.10	-188.45	0.00	0.00	0.00
6,900.00	4.96	194.60	6,891.50	-196.81	-51.28	-196.82	0.00	0.00	0.00
7,000.00	4.96	194.60	6,991.13	-205.18	-53.46	-205.19	0.00	0.00	0.00
7,100.00	4.96	194.60	7,090.75	-213.55	-55.64	-213.55	0.00	0.00	0.00
7,200.00	4.96	194.60	7,190.38	-221.92	-57.82	-221.92	0.00	0.00	0.00
7,300.00	4.96	194.60	7,290.00	-230.28	-60.00	-230.29	0.00	0.00	0.00
7,400.00	4.96	194.60	7,389.63	-238.65	-62.18	-238.66	0.00	0.00	0.00
7,500.00	4.96	194.60	7,489.25	-247.02	-64.36	-247.02	0.00	0.00	0.00
7,600.00	4.96	194.60	7,588.88	-255.39	-66.54	-255.39	0.00	0.00	0.00
7,700.00	4.96	194.60	7,688.50	-263.75	-68.72	-263.76	0.00	0.00	0.00
7,800.00	4.96	194.60	7,788.13	-272.12	-70.90	-272.13	0.00	0.00	0.00
7,900.00	4.96	194.60	7,887.76	-280.49	-73.08	-280.49	0.00	0.00	0.00
8,000.00	4.96	194.60	7,987.38	-288.85	-75.26	-288.86	0.00	0.00	0.00
8,100.00	4.96	194.60	8,087.01	-297.22	-77.44	-297.23	0.00	0.00	0.00
8,200.00	4.96	194.60	8,186.63	-305.59	-79.62	-305.60	0.00	0.00	0.00
8,300.00	4.96	194.60	8,286.26	-313.96	-81.80	-313.96	0.00	0.00	0.00
8,400.00	4.96	194.60	8,385.88	-322.32	-83.98	-322.33	0.00	0.00	0.00
8,500.00	4.96	194.60	8,485.51	-330.69	-86.16	-330.70	0.00	0.00	0.00
8,523.73	4.96	194.60	8,509.15	-332.68	-86.68	-332.69	0.00	0.00	0.00
Drop									
8,600.00	4.58	194.60	8,585.15	-338.81	-88.28	-338.82	0.50	-0.50	0.00
8,700.00	4.08	194.60	8,684.87	-346.12	-90.18	-346.13	0.50	-0.50	0.00
8,800.00	3.58	194.60	8,784.65	-352.58	-91.86	-352.59	0.50	-0.50	0.00
8,900.00	3.08	194.60	8,884.48	-358.20	-93.33	-358.21	0.50	-0.50	0.00
9,000.00	2.58	194.60	8,984.35	-362.98	-94.57	-362.99	0.50	-0.50	0.00
9,100.00	2.08	194.60	9,084.27	-366.91	-95.60	-366.92	0.50	-0.50	0.00
9,200.00	1.58	194.60	9,184.22	-370.00	-96.40	-370.01	0.50	-0.50	0.00
9,300.00	1.08	194.60	9,284.19	-372.24	-96.99	-372.25	0.50	-0.50	0.00
9,400.00	0.58	194.60	9,384.18	-373.64	-97.35	-373.65	0.50	-0.50	0.00
9,500.00	0.08	194.60	9,484.18	-374.20	-97.50	-374.21	0.50	-0.50	0.00
9,515.82	0.00	0.00	9,500.00	-374.21	-97.50	-374.22	0.50	-0.50	0.00
Hold									
9,600.00	0.00	0.00	9,584.18	-374.21	-97.50	-374.22	0.00	0.00	0.00



LEAM Drilling Systems LLC
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MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,700.00	0.00	0.00	9,684.18	-374.21	-97.50	-374.22	0.00	0.00	0.00
9,800.00	0.00	0.00	9,784.18	-374.21	-97.50	-374.22	0.00	0.00	0.00
9,903.87	0.00	0.00	9,888.05	-374.21	-97.50	-374.22	0.00	0.00	0.00
KOP 10° DLS									
9,950.00	4.61	0.00	9,934.13	-372.35	-97.50	-372.36	10.00	10.00	0.00
10,000.00	9.61	0.00	9,983.73	-366.16	-97.50	-366.17	10.00	10.00	0.00
10,050.00	14.61	0.00	10,032.60	-355.68	-97.50	-355.68	10.00	10.00	0.00
10,100.00	19.61	0.00	10,080.37	-340.97	-97.50	-340.98	10.00	10.00	0.00
10,150.00	24.61	0.00	10,126.68	-322.15	-97.50	-322.16	10.00	10.00	0.00
10,200.00	29.61	0.00	10,171.17	-299.37	-97.50	-299.38	10.00	10.00	0.00
10,250.00	34.61	0.00	10,213.51	-272.80	-97.49	-272.81	10.00	10.00	0.00
10,300.00	39.61	0.00	10,253.37	-242.64	-97.49	-242.65	10.00	10.00	0.00
10,350.00	44.61	0.00	10,290.45	-209.12	-97.49	-209.13	10.00	10.00	0.00
10,400.00	49.61	0.00	10,324.46	-172.50	-97.49	-172.51	10.00	10.00	0.00
10,450.00	54.61	0.00	10,355.16	-133.05	-97.49	-133.06	10.00	10.00	0.00
10,500.00	59.61	0.00	10,382.30	-91.08	-97.48	-91.08	10.00	10.00	0.00
10,550.00	64.61	0.00	10,405.68	-46.90	-97.48	-46.90	10.00	10.00	0.00
10,600.00	69.61	0.00	10,425.12	-0.85	-97.48	-0.86	10.00	10.00	0.00
10,650.00	74.61	0.00	10,440.47	46.72	-97.48	46.71	10.00	10.00	0.00
10,700.00	79.61	0.00	10,451.62	95.45	-97.47	95.44	10.00	10.00	0.00
10,750.00	84.61	0.00	10,458.48	144.96	-97.47	144.95	10.00	10.00	0.00
10,800.00	89.61	0.00	10,460.99	194.88	-97.47	194.87	10.00	10.00	0.00
10,805.67	90.18	0.00	10,461.01	200.54	-97.47	200.54	10.00	10.00	0.00
10,900.00	90.18	0.00	10,460.71	294.88	-97.46	294.87	0.00	0.00	0.00
11,000.00	90.18	0.00	10,460.40	394.88	-97.46	394.87	0.00	0.00	0.00
11,100.00	90.18	0.00	10,460.08	494.88	-97.45	494.87	0.00	0.00	0.00
11,200.00	90.18	0.00	10,459.77	594.88	-97.44	594.87	0.00	0.00	0.00
11,300.00	90.18	0.00	10,459.46	694.88	-97.44	694.87	0.00	0.00	0.00
11,400.00	90.18	0.00	10,459.14	794.88	-97.43	794.87	0.00	0.00	0.00
11,500.00	90.18	0.00	10,458.83	894.87	-97.43	894.87	0.00	0.00	0.00
11,600.00	90.18	0.00	10,458.51	994.87	-97.42	994.87	0.00	0.00	0.00
11,700.00	90.18	0.00	10,458.20	1,094.87	-97.42	1,094.87	0.00	0.00	0.00
11,800.00	90.18	0.00	10,457.89	1,194.87	-97.41	1,194.86	0.00	0.00	0.00
11,900.00	90.18	0.00	10,457.57	1,294.87	-97.40	1,294.86	0.00	0.00	0.00
12,000.00	90.18	0.00	10,457.26	1,394.87	-97.40	1,394.86	0.00	0.00	0.00
12,100.00	90.18	0.00	10,456.95	1,494.87	-97.39	1,494.86	0.00	0.00	0.00
12,200.00	90.18	0.00	10,456.63	1,594.87	-97.39	1,594.86	0.00	0.00	0.00
12,300.00	90.18	0.00	10,456.32	1,694.87	-97.38	1,694.86	0.00	0.00	0.00
12,400.00	90.18	0.00	10,456.01	1,794.87	-97.38	1,794.86	0.00	0.00	0.00
12,500.00	90.18	0.00	10,455.69	1,894.87	-97.37	1,894.86	0.00	0.00	0.00
12,600.00	90.18	0.00	10,455.38	1,994.87	-97.36	1,994.86	0.00	0.00	0.00
12,700.00	90.18	0.00	10,455.07	2,094.87	-97.36	2,094.86	0.00	0.00	0.00
12,800.00	90.18	0.00	10,454.75	2,194.87	-97.35	2,194.86	0.00	0.00	0.00
12,900.00	90.18	0.00	10,454.44	2,294.87	-97.35	2,294.86	0.00	0.00	0.00
13,000.00	90.18	0.00	10,454.12	2,394.87	-97.34	2,394.86	0.00	0.00	0.00
13,100.00	90.18	0.00	10,453.81	2,494.87	-97.34	2,494.86	0.00	0.00	0.00
13,200.00	90.18	0.00	10,453.50	2,594.87	-97.33	2,594.86	0.00	0.00	0.00
13,300.00	90.18	0.00	10,453.18	2,694.87	-97.32	2,694.86	0.00	0.00	0.00
13,400.00	90.18	0.00	10,452.87	2,794.87	-97.32	2,794.86	0.00	0.00	0.00
13,500.00	90.18	0.00	10,452.56	2,894.86	-97.31	2,894.86	0.00	0.00	0.00
13,600.00	90.18	0.00	10,452.24	2,994.86	-97.31	2,994.86	0.00	0.00	0.00
13,700.00	90.18	0.00	10,451.93	3,094.86	-97.30	3,094.86	0.00	0.00	0.00
13,800.00	90.18	0.00	10,451.62	3,194.86	-97.30	3,194.85	0.00	0.00	0.00
13,900.00	90.18	0.00	10,451.30	3,294.86	-97.29	3,294.85	0.00	0.00	0.00



LEAM Drilling Systems LLC
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Company:	DEVON ENERGY	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,000.00	90.18	0.00	10,450.99	3,394.86	-97.28	3,394.85	0.00	0.00	0.00	
14,100.00	90.18	0.00	10,450.68	3,494.86	-97.28	3,494.85	0.00	0.00	0.00	
14,200.00	90.18	0.00	10,450.36	3,594.86	-97.27	3,594.85	0.00	0.00	0.00	
14,300.00	90.18	0.00	10,450.05	3,694.86	-97.27	3,694.85	0.00	0.00	0.00	
14,400.00	90.18	0.00	10,449.74	3,794.86	-97.26	3,794.85	0.00	0.00	0.00	
14,500.00	90.18	0.00	10,449.42	3,894.86	-97.26	3,894.85	0.00	0.00	0.00	
14,600.00	90.18	0.00	10,449.11	3,994.86	-97.25	3,994.85	0.00	0.00	0.00	
14,700.00	90.18	0.00	10,448.79	4,094.86	-97.24	4,094.85	0.00	0.00	0.00	
14,800.00	90.18	0.00	10,448.48	4,194.86	-97.24	4,194.85	0.00	0.00	0.00	
14,900.00	90.18	0.00	10,448.17	4,294.86	-97.23	4,294.85	0.00	0.00	0.00	
14,953.26	90.18	0.00	10,448.00	4,348.12	-97.23	4,348.11	0.00	0.00	0.00	
TD - PBHL (CDU 453H)										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (CDU 453H)	0.00	0.01	0.00	0.00	0.00	414,943.32	734,339.98	32° 8' 21.199 N	103° 42' 35.215 W
- plan hits target center									
- Point									
PBHL (CDU 453H)	0.00	0.00	10,448.00	4,348.12	-97.23	419,291.44	734,242.75	32° 9' 4.232 N	103° 42' 36.053 W
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,805.67	1,805.67	0.00	0.00	LP	
4,300.00	4,300.00	0.00	0.00	Nudge	
4,796.04	4,795.42	-20.77	-5.41	Hold	
8,523.73	8,509.15	-332.68	-86.68	Drop	
9,515.82	9,500.00	-374.21	-97.50	Hold	
9,903.87	9,888.05	-374.21	-97.50	KOP 10° DLS	
14,953.26	10,448.00	4,348.12	-97.23	TD	



DEVON ENERGY

Lea County, NM (NAD-83)

Cotton Draw Unit

453H (SIMOPS)

OH

Plan #1

Anticollision Report

03 February, 2016





LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	2/2/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	14,953.26	Plan #1 (OH)	LEAM MWD-ADJ	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Cotton Draw Unit						
312H (SIMOPS) - OH - Plan #1	4,806.72	4,794.18	149.51	128.77	7.208	CC, ES
312H (SIMOPS) - OH - Plan #1	9,900.00	9,902.05	173.58	131.84	4.159	SF
313H (SIMOPS) - OH - Plan #1	4,895.31	4,886.84	115.76	94.59	5.469	CC
313H (SIMOPS) - OH - Plan #1	4,900.00	4,891.43	115.76	94.58	5.465	ES
313H (SIMOPS) - OH - Plan #1	5,000.00	4,989.16	117.13	95.57	5.432	SF
319H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	210.82	191.78	11.074	CC
319H (SIMOPS) - OH - Plan #1	4,400.00	4,400.15	211.03	191.60	10.861	ES
319H (SIMOPS) - OH - Plan #1	8,600.00	8,626.77	349.66	311.06	9.058	SF
320H (SIMOPS) - OH - Plan #1	5,754.19	5,767.34	99.85	75.09	4.034	CC, ES
320H (SIMOPS) - OH - Plan #1	5,800.00	5,812.61	100.10	75.13	4.010	SF
321H (SIMOPS) - OH - Plan #1	4,832.95	4,828.67	65.81	44.83	3.138	CC, ES, SF
327H (SIMOPS) - OH - Plan #1	7,577.27	7,589.67	58.55	25.91	1.794	CC
327H (SIMOPS) - OH - Plan #1	7,600.00	7,612.18	58.60	25.88	1.791	ES, SF
328H (SIMOPS) - OH - Plan #1	5,623.31	5,641.54	126.58	102.26	5.205	CC, ES
328H (SIMOPS) - OH - Plan #1	5,700.00	5,716.47	127.64	102.94	5.169	SF
332H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	180.76	161.73	9.495	CC
332H (SIMOPS) - OH - Plan #1	4,400.00	4,398.02	181.02	161.59	9.318	ES
332H (SIMOPS) - OH - Plan #1	14,953.26	14,829.84	548.39	403.23	3.778	SF
333H (SIMOPS) - OH - Plan #1	5,939.43	5,948.33	27.46	1.92	1.075	Level 2, CC, ES, SF
451H (SIMOPS) - OH - Plan #1	4,744.95	4,742.41	44.31	23.66	2.146	CC, ES
451H (SIMOPS) - OH - Plan #1	4,800.00	4,796.79	44.70	23.85	2.144	SF
452H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	25.00	5.96	1.313	Level 3, CC, ES, SF

Offset Design													Cotton Draw Unit - 312H (SIMOPS) - 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											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning					
0.00	0.00	0.00	0.00	0.00	0.00	179.82	-149.96	0.46	149.96									
100.00	100.00	100.00	100.00	0.08	0.08	179.82	-149.96	0.46	149.96	149.80	0.16	953.121						
200.00	200.00	200.00	200.00	0.30	0.30	179.82	-149.96	0.46	149.96	149.35	0.61	247.106						
300.00	300.00	300.00	300.00	0.53	0.53	179.82	-149.96	0.46	149.96	148.90	1.06	141.954						
400.00	400.00	400.00	400.00	0.75	0.75	179.82	-149.96	0.46	149.96	148.45	1.51	99.580						
500.00	500.00	500.00	500.00	0.98	0.98	179.82	-149.96	0.46	149.96	148.01	1.96	76.688						

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 312H (SIMOPS) - 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		
600.00	800.00	600.00	600.00	1.20	1.20	179.82	-149.96	0.46	149.96	147.56	2.40	62.354		
700.00	700.00	700.00	700.00	1.43	1.43	179.82	-149.96	0.46	149.96	147.11	2.85	52.534		
800.00	800.00	800.00	800.00	1.65	1.65	179.82	-149.96	0.46	149.96	146.66	3.30	45.387		
900.00	900.00	900.00	900.00	1.88	1.88	179.82	-149.96	0.46	149.96	146.21	3.75	39.951		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.82	-149.96	0.46	149.96	145.76	4.20	35.678		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.82	-149.96	0.46	149.96	145.31	4.65	32.231		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.82	-149.96	0.46	149.96	144.86	5.10	29.391		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.82	-149.96	0.46	149.96	144.41	5.55	27.012		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.82	-149.96	0.46	149.96	143.96	6.00	24.988		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.82	-149.96	0.46	149.96	143.51	6.45	23.247		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.82	-149.96	0.46	149.96	143.06	6.90	21.732		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.82	-149.96	0.46	149.96	142.61	7.35	20.403		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.82	-149.96	0.46	149.96	142.16	7.80	19.227		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.82	-149.96	0.46	149.96	141.71	8.25	18.179		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.82	-149.96	0.46	149.96	141.26	8.70	17.240		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.82	-149.96	0.46	149.96	140.81	9.15	16.393		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.82	-149.96	0.46	149.96	140.36	9.60	15.625		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.82	-149.96	0.46	149.96	139.91	10.05	14.926		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.82	-149.96	0.46	149.96	139.46	10.50	14.287		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.82	-149.96	0.46	149.96	139.01	10.95	13.700		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.82	-149.96	0.46	149.96	138.57	11.40	13.159		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.82	-149.96	0.46	149.96	138.12	11.85	12.660		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.82	-149.96	0.46	149.96	137.67	12.29	12.197		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.82	-149.96	0.46	149.96	137.22	12.74	11.767		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.82	-149.96	0.46	149.96	136.77	13.19	11.366		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.82	-149.96	0.46	149.96	136.32	13.64	10.992		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.82	-149.96	0.46	149.96	135.87	14.09	10.641		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.82	-149.96	0.46	149.96	135.42	14.54	10.312		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.82	-149.96	0.46	149.96	134.97	14.99	10.003		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.82	-149.96	0.46	149.96	134.52	15.44	9.712		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.82	-149.96	0.46	149.96	134.07	15.89	9.437		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.82	-149.96	0.46	149.96	133.62	16.34	9.177		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.82	-149.96	0.46	149.96	133.17	16.79	8.932		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.82	-149.96	0.46	149.96	132.72	17.24	8.699		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.82	-149.96	0.46	149.96	132.27	17.69	8.478		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.82	-149.96	0.46	149.96	131.82	18.14	8.267		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.82	-149.96	0.46	149.96	131.37	18.59	8.068		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.82	-149.96	0.46	149.96	130.92	19.04	7.877		
4,400.00	4,400.00	4,397.52	4,397.52	9.71	9.71	-14.79	-150.77	0.26	149.94	130.52	19.42	7.720		
4,500.00	4,499.96	4,495.05	4,495.01	9.88	9.88	-14.81	-153.18	-0.33	149.89	130.14	19.75	7.590		
4,600.00	4,599.96	4,592.57	4,592.44	10.06	10.04	-14.84	-157.21	-1.32	149.80	129.73	20.07	7.463		
4,700.00	4,699.68	4,690.10	4,689.80	10.23	10.21	-14.88	-162.85	-2.70	149.68	129.28	20.40	7.339		
4,800.00	4,799.37	4,787.63	4,787.04	10.40	10.38	-14.94	-170.10	-4.48	149.52	128.80	20.72	7.217		
4,806.72	4,806.06	4,794.18	4,793.57	10.42	10.39	-14.95	-170.65	-4.61	149.51	128.77	20.74	7.208 CC, ES		
4,900.00	4,898.99	4,886.51	4,885.52	10.58	10.56	-14.95	-178.84	-6.62	149.98	128.91	21.07	7.118		
5,000.00	4,998.62	4,986.51	4,985.08	10.77	10.74	-14.94	-187.84	-8.82	150.62	129.18	21.43	7.028		
5,100.00	5,098.24	5,086.51	5,084.65	10.95	10.93	-14.93	-196.83	-11.03	151.25	129.45	21.80	6.939		
5,200.00	5,197.87	5,186.51	5,184.22	11.15	11.12	-14.91	-205.83	-13.23	151.88	129.72	22.16	6.852		
5,300.00	5,297.49	5,286.51	5,283.79	11.34	11.32	-14.90	-214.83	-15.44	152.52	129.98	22.54	6.767		
5,400.00	5,397.12	5,386.50	5,383.35	11.54	11.52	-14.89	-223.83	-17.64	153.15	130.24	22.91	6.684		
5,500.00	5,496.74	5,486.50	5,482.92	11.74	11.72	-14.88	-232.83	-19.85	153.78	130.49	23.29	6.602		
5,600.00	5,596.37	5,586.50	5,582.49	11.95	11.93	-14.87	-241.83	-22.05	154.42	130.74	23.68	6.522		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 312H (SIMOPS) - 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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,700.00	5,896.00	5,886.50	5,882.06	12.15	12.14	-14.86	-250.82	-24.26	155.05	130.99	24.06	6.444		
5,800.00	5,795.62	5,786.50	5,781.63	12.37	12.35	-14.85	-259.82	-26.46	155.68	131.23	24.45	6.367		
5,900.00	5,895.25	5,886.49	5,881.19	12.58	12.57	-14.84	-268.82	-28.67	156.32	131.47	24.84	6.292		
6,000.00	5,994.87	5,986.49	5,980.76	12.79	12.78	-14.83	-277.82	-30.88	156.95	131.71	25.24	6.219		
6,100.00	6,094.50	6,086.49	6,080.33	13.01	13.00	-14.82	-286.82	-33.08	157.58	131.95	25.64	6.147		
6,200.00	6,194.12	6,186.49	6,179.90	13.23	13.23	-14.81	-295.82	-35.29	158.22	132.18	26.04	6.077		
6,300.00	6,293.75	6,286.49	6,279.47	13.45	13.45	-14.80	-304.81	-37.49	158.85	132.41	26.44	6.008		
6,400.00	6,393.37	6,386.48	6,379.03	13.68	13.68	-14.79	-313.81	-39.70	159.48	132.64	26.84	5.941		
6,500.00	6,493.00	6,486.48	6,478.60	13.90	13.91	-14.78	-322.81	-41.90	160.12	132.87	27.25	5.876		
6,600.00	6,592.62	6,586.48	6,578.17	14.13	14.14	-14.77	-331.81	-44.11	160.75	133.09	27.66	5.812		
6,700.00	6,692.25	6,686.48	6,677.74	14.36	14.37	-14.76	-340.81	-46.31	161.38	133.31	28.07	5.749		
6,800.00	6,791.88	6,786.48	6,777.31	14.59	14.61	-14.75	-349.81	-48.52	162.02	133.53	28.48	5.688		
6,900.00	6,891.50	6,886.47	6,876.87	14.83	14.85	-14.74	-358.80	-50.72	162.65	133.75	28.90	5.628		
7,000.00	6,991.13	6,986.47	6,976.44	15.06	15.08	-14.73	-367.80	-52.93	163.28	133.97	29.32	5.570		
7,100.00	7,090.75	7,086.47	7,076.01	15.30	15.32	-14.72	-376.80	-55.13	163.92	134.18	29.73	5.513		
7,200.00	7,190.38	7,186.47	7,175.58	15.53	15.57	-14.71	-385.80	-57.34	164.55	134.40	30.15	5.457		
7,300.00	7,290.00	7,286.47	7,275.14	15.77	15.81	-14.70	-394.80	-59.54	165.19	134.61	30.58	5.403		
7,400.00	7,389.63	7,386.46	7,374.71	16.01	16.05	-14.69	-403.80	-61.75	165.82	134.82	31.00	5.349		
7,500.00	7,489.25	7,486.46	7,474.28	16.25	16.30	-14.68	-412.79	-63.96	166.45	135.03	31.42	5.297		
7,600.00	7,588.88	7,586.46	7,573.85	16.49	16.55	-14.67	-421.79	-66.16	167.09	135.24	31.85	5.246		
7,700.00	7,688.50	7,686.46	7,673.42	16.74	16.79	-14.66	-430.79	-68.37	167.72	135.44	32.28	5.197		
7,800.00	7,788.13	7,786.46	7,772.98	16.98	17.04	-14.66	-439.79	-70.57	168.35	135.65	32.70	5.148		
7,900.00	7,887.76	7,886.45	7,872.55	17.22	17.29	-14.65	-448.79	-72.78	168.99	135.85	33.13	5.100		
8,000.00	7,987.38	7,986.45	7,972.12	17.47	17.54	-14.64	-457.79	-74.98	169.62	136.06	33.56	5.054		
8,100.00	8,087.01	8,086.45	8,071.69	17.72	17.79	-14.63	-466.78	-77.19	170.25	136.26	34.00	5.008		
8,200.00	8,186.63	8,186.45	8,171.26	17.96	18.05	-14.62	-475.78	-79.39	170.89	136.46	34.43	4.964		
8,300.00	8,286.26	8,286.45	8,270.82	18.21	18.30	-14.61	-484.78	-81.60	171.52	136.66	34.86	4.920		
8,400.00	8,385.88	8,386.44	8,370.39	18.46	18.56	-14.60	-493.78	-83.80	172.15	136.86	35.30	4.877		
8,500.00	8,485.51	8,486.91	8,470.43	18.71	18.81	-14.60	-502.78	-86.01	172.74	137.01	35.73	4.834		
8,600.00	8,585.15	8,588.40	8,571.55	18.96	19.05	-14.63	-511.20	-88.07	172.92	136.74	36.18	4.779		
8,700.00	8,684.87	8,689.89	8,672.74	19.19	19.29	-14.65	-518.75	-89.92	173.06	136.43	36.63	4.725		
8,800.00	8,784.65	8,791.38	8,773.99	19.41	19.52	-14.68	-525.43	-91.56	173.18	136.11	37.07	4.672		
8,900.00	8,884.48	8,892.87	8,875.31	19.64	19.75	-14.70	-531.24	-92.98	173.28	135.77	37.51	4.620		
9,000.00	8,984.35	8,994.36	8,976.67	19.86	19.97	-14.71	-536.18	-94.19	173.37	135.43	37.94	4.569		
9,100.00	9,084.27	9,095.85	9,078.07	20.08	20.19	-14.73	-540.24	-95.19	173.44	135.07	38.37	4.520		
9,200.00	9,184.22	9,197.34	9,179.51	20.29	20.41	-14.74	-543.44	-95.97	173.50	134.70	38.80	4.471		
9,300.00	9,284.19	9,298.83	9,280.97	20.50	20.62	-14.75	-545.76	-96.54	173.54	134.32	39.23	4.424		
9,400.00	9,384.18	9,400.32	9,382.45	20.70	20.83	-14.75	-547.20	-96.90	173.57	133.92	39.65	4.378		
9,500.00	9,484.18	9,501.81	9,483.94	20.90	21.03	-14.76	-547.78	-97.04	173.58	133.52	40.06	4.333		
9,600.00	9,584.18	9,602.05	9,584.18	21.10	21.23	179.85	-547.79	-97.04	173.58	133.11	40.48	4.289		
9,700.00	9,684.18	9,702.05	9,684.18	21.30	21.43	179.85	-547.79	-97.04	173.58	132.68	40.90	4.244		
9,800.00	9,784.18	9,802.05	9,784.18	21.50	21.63	179.85	-547.79	-97.04	173.58	132.26	41.32	4.201		
9,900.00	9,884.18	9,902.05	9,884.18	21.70	21.83	179.85	-547.79	-97.04	173.58	131.84	41.74	4.159 SF		
10,000.00	9,983.73	10,001.60	9,983.73	21.87	22.03	179.85	-547.79	-97.04	181.63	139.99	41.64	4.362		
10,100.00	10,080.37	10,098.24	10,080.37	21.96	22.22	179.86	-547.79	-97.04	206.82	166.11	40.71	5.080		
10,200.00	10,171.17	10,189.04	10,171.17	21.99	22.41	179.88	-547.79	-97.04	248.42	209.36	39.06	6.361		
10,300.00	10,253.37	10,271.24	10,253.37	21.98	22.57	179.89	-547.79	-97.04	305.15	268.33	36.82	8.288		
10,400.00	10,324.46	10,342.33	10,324.46	21.97	22.72	179.89	-547.79	-97.04	375.29	341.05	34.24	10.960		
10,500.00	10,382.30	10,400.17	10,382.30	21.99	22.84	179.88	-547.79	-97.04	456.71	425.07	31.64	14.435		
10,600.00	10,425.12	10,442.99	10,425.12	22.09	22.92	179.86	-547.79	-97.04	546.94	517.52	29.42	18.588		
10,700.00	10,451.62	10,469.49	10,451.62	22.31	22.98	179.77	-547.79	-97.04	643.24	615.20	28.03	22.944		
10,800.00	10,460.99	10,478.87	10,460.99	22.64	22.99	174.65	-547.79	-97.04	742.67	714.61	28.06	26.469		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 312H (SIMOPS) - 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		
10,900.00	10,460.71	10,478.58	10,460.71	23.11	22.99	10.08	-547.79	-97.04	842.67	814.01	28.65	29.408		
11,000.00	10,460.40	10,478.27	10,460.40	23.70	22.99	9.03	-547.79	-97.04	942.67	913.90	28.77	32.769		
11,100.00	10,460.08	10,477.95	10,460.08	24.42	22.99	8.18	-547.79	-97.04	1,042.67	1,013.72	28.95	36.019		
11,200.00	10,459.77	10,477.64	10,459.77	25.25	22.99	7.47	-547.79	-97.04	1,142.67	1,113.48	29.18	39.157		
11,300.00	10,459.46	12,704.62	11,690.00	26.18	29.87	179.98	694.87	-97.09	1,230.54	1,196.06	34.49	35.680		
11,400.00	10,459.14	12,804.62	11,690.00	27.20	30.92	179.98	794.87	-97.09	1,230.86	1,195.68	35.18	34.987		
11,500.00	10,458.83	12,904.62	11,690.00	28.30	32.05	179.98	894.87	-97.10	1,231.17	1,195.25	35.92	34.275		
11,600.00	10,458.51	13,004.62	11,690.00	29.47	33.24	179.99	994.87	-97.10	1,231.48	1,194.78	36.70	33.552		
11,700.00	10,458.20	13,104.62	11,690.00	30.71	34.49	179.99	1,094.87	-97.10	1,231.80	1,194.27	37.53	32.822		
11,800.00	10,457.89	13,204.62	11,690.00	32.00	35.78	179.99	1,194.87	-97.11	1,232.11	1,193.72	38.39	32.092		
11,900.00	10,457.57	13,304.61	11,690.00	33.35	37.12	179.99	1,294.87	-97.11	1,232.42	1,193.13	39.29	31.365		
12,000.00	10,457.26	13,404.61	11,690.00	34.74	38.50	179.99	1,394.87	-97.12	1,232.74	1,192.51	40.23	30.646		
12,100.00	10,456.95	13,504.61	11,690.00	36.16	39.92	179.99	1,494.87	-97.12	1,233.05	1,191.86	41.19	29.936		
12,200.00	10,456.63	13,604.61	11,690.00	37.62	41.37	179.99	1,594.87	-97.12	1,233.37	1,191.18	42.18	29.238		
12,300.00	10,456.32	13,704.61	11,690.00	39.12	42.85	179.99	1,694.87	-97.13	1,233.68	1,190.48	43.20	28.555		
12,400.00	10,456.01	13,804.61	11,690.00	40.63	44.35	179.99	1,794.87	-97.13	1,233.99	1,189.74	44.25	27.888		
12,500.00	10,455.69	13,904.61	11,690.00	42.18	45.88	179.99	1,894.87	-97.13	1,234.31	1,188.99	45.32	27.237		
12,600.00	10,455.38	14,004.61	11,690.00	43.74	47.42	179.99	1,994.87	-97.14	1,234.62	1,188.21	46.41	26.604		
12,700.00	10,455.07	14,104.61	11,690.00	45.33	48.99	179.99	2,094.87	-97.14	1,234.93	1,187.42	47.52	25.989		
12,800.00	10,454.75	14,204.61	11,690.00	46.93	50.58	179.99	2,194.87	-97.15	1,235.25	1,186.60	48.65	25.392		
12,900.00	10,454.44	14,304.61	11,690.00	48.55	52.18	179.99	2,294.87	-97.15	1,235.56	1,185.77	49.79	24.813		
13,000.00	10,454.12	14,404.61	11,690.00	50.18	53.79	179.99	2,394.87	-97.15	1,235.87	1,184.92	50.96	24.253		
13,100.00	10,453.81	14,504.61	11,690.00	51.83	55.42	179.99	2,494.87	-97.16	1,236.19	1,184.05	52.14	23.711		
13,200.00	10,453.50	14,604.61	11,690.00	53.49	57.06	179.99	2,594.87	-97.16	1,236.50	1,183.17	53.33	23.186		
13,300.00	10,453.18	14,704.61	11,690.00	55.15	58.71	179.99	2,694.87	-97.17	1,236.82	1,182.28	54.53	22.679		
13,400.00	10,452.87	14,804.61	11,690.00	56.83	60.37	179.99	2,794.86	-97.17	1,237.13	1,181.38	55.75	22.189		
13,500.00	10,452.56	14,904.61	11,690.00	58.52	62.04	179.99	2,894.86	-97.17	1,237.44	1,180.46	56.98	21.716		
13,600.00	10,452.24	15,004.61	11,690.00	60.22	63.72	179.99	2,994.86	-97.18	1,237.76	1,179.53	58.22	21.258		
13,700.00	10,451.93	15,104.61	11,690.00	61.92	65.41	179.99	3,094.86	-97.18	1,238.07	1,178.59	59.48	20.816		
13,800.00	10,451.62	15,204.61	11,690.00	63.63	67.11	179.99	3,194.86	-97.19	1,238.38	1,177.65	60.74	20.390		
13,900.00	10,451.30	15,304.61	11,690.00	65.34	68.81	180.00	3,294.86	-97.19	1,238.70	1,176.69	62.01	19.977		
14,000.00	10,450.99	15,404.60	11,690.00	67.07	70.52	180.00	3,394.86	-97.19	1,239.01	1,175.73	63.28	19.578		
14,100.00	10,450.68	15,504.60	11,690.00	68.79	72.23	180.00	3,494.86	-97.20	1,239.32	1,174.75	64.57	19.193		
14,200.00	10,450.36	15,604.60	11,690.00	70.52	73.95	180.00	3,594.86	-97.20	1,239.64	1,173.77	65.86	18.821		
14,300.00	10,450.05	15,704.60	11,690.00	72.26	75.67	180.00	3,694.86	-97.20	1,239.95	1,172.79	67.17	18.461		
14,400.00	10,449.74	15,804.60	11,690.00	74.00	77.40	180.00	3,794.86	-97.21	1,240.26	1,171.79	68.47	18.113		
14,500.00	10,449.42	15,904.60	11,690.00	75.75	79.13	180.00	3,894.86	-97.21	1,240.58	1,170.79	69.79	17.777		
14,600.00	10,449.11	16,004.60	11,690.00	77.50	80.87	180.00	3,994.86	-97.22	1,240.89	1,169.79	71.11	17.451		
14,700.00	10,448.79	16,104.60	11,690.00	79.25	82.61	180.00	4,094.86	-97.22	1,241.21	1,168.77	72.43	17.136		
14,800.00	10,448.48	16,204.60	11,690.00	81.01	84.36	180.00	4,194.86	-97.22	1,241.52	1,167.76	73.76	16.831		
14,900.00	10,448.17	16,304.60	11,690.00	82.77	86.11	180.00	4,294.86	-97.23	1,241.83	1,166.73	75.10	16.536		
14,953.26	10,448.00	16,357.86	11,690.00	83.70	87.04	-180.00	4,348.12	-97.23	1,242.00	1,166.19	75.81	16.383		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 313H (SIMOPS) - 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		
0.00	0.00	0.00	0.00	0.00	0.00	179.82	-124.97	0.39	124.97					
100.00	100.00	100.00	100.00	0.08	0.08	179.82	-124.97	0.39	124.97	124.81	0.16	794.289		
200.00	200.00	200.00	200.00	0.30	0.30	179.82	-124.97	0.39	124.97	124.36	0.61	205.927		
300.00	300.00	300.00	300.00	0.53	0.53	179.82	-124.97	0.39	124.97	123.91	1.06	118.299		
400.00	400.00	400.00	400.00	0.75	0.75	179.82	-124.97	0.39	124.97	123.46	1.51	82.986		
500.00	500.00	500.00	500.00	0.98	0.98	179.82	-124.97	0.39	124.97	123.02	1.96	63.908		
600.00	600.00	600.00	600.00	1.20	1.20	179.82	-124.97	0.39	124.97	122.57	2.40	51.963		
700.00	700.00	700.00	700.00	1.43	1.43	179.82	-124.97	0.39	124.97	122.12	2.85	43.780		
800.00	800.00	800.00	800.00	1.65	1.65	179.82	-124.97	0.39	124.97	121.67	3.30	37.823		
900.00	900.00	900.00	900.00	1.88	1.88	179.82	-124.97	0.39	124.97	121.22	3.75	33.294		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.82	-124.97	0.39	124.97	120.77	4.20	29.733		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.82	-124.97	0.39	124.97	120.32	4.65	26.860		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.82	-124.97	0.39	124.97	119.87	5.10	24.494		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.82	-124.97	0.39	124.97	119.42	5.55	22.510		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.82	-124.97	0.39	124.97	118.97	6.00	20.824		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.82	-124.97	0.39	124.97	118.52	6.45	19.373		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.82	-124.97	0.39	124.97	118.07	6.90	18.111		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.82	-124.97	0.39	124.97	117.62	7.35	17.003		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.82	-124.97	0.39	124.97	117.17	7.80	16.023		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.82	-124.97	0.39	124.97	116.72	8.25	15.150		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.82	-124.97	0.39	124.97	116.27	8.70	14.367		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.82	-124.97	0.39	124.97	115.82	9.15	13.661		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.82	-124.97	0.39	124.97	115.37	9.60	13.021		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.82	-124.97	0.39	124.97	114.92	10.05	12.439		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.82	-124.97	0.39	124.97	114.47	10.50	11.906		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.82	-124.97	0.39	124.97	114.02	10.95	11.417		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.82	-124.97	0.39	124.97	113.57	11.40	10.967		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.82	-124.97	0.39	124.97	113.13	11.85	10.550		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.82	-124.97	0.39	124.97	112.68	12.29	10.165		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.82	-124.97	0.39	124.97	112.23	12.74	9.806		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.82	-124.97	0.39	124.97	111.78	13.19	9.472		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.82	-124.97	0.39	124.97	111.33	13.64	9.160		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.82	-124.97	0.39	124.97	110.88	14.09	8.868		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.82	-124.97	0.39	124.97	110.43	14.54	8.594		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.82	-124.97	0.39	124.97	109.98	14.99	8.336		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.82	-124.97	0.39	124.97	109.53	15.44	8.093		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.82	-124.97	0.39	124.97	109.08	15.89	7.864		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.82	-124.97	0.39	124.97	108.63	16.34	7.648		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.82	-124.97	0.39	124.97	108.18	16.79	7.443		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.82	-124.97	0.39	124.97	107.73	17.24	7.249		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.82	-124.97	0.39	124.97	107.28	17.69	7.065		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.82	-124.97	0.39	124.97	106.83	18.14	6.890		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.82	-124.97	0.39	124.97	106.38	18.59	6.723		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.82	-124.97	0.39	124.97	105.93	19.04	6.564		
4,400.00	4,400.00	4,398.95	4,398.95	9.71	9.72	-15.23	-125.38	1.14	124.54	105.11	19.43	6.409		
4,500.00	4,499.96	4,497.84	4,497.80	9.88	9.90	-16.59	-126.60	3.39	123.31	103.54	19.78	6.236		
4,600.00	4,599.86	4,596.59	4,596.46	10.06	10.09	-18.91	-128.63	7.14	121.42	101.30	20.12	6.035		
4,700.00	4,699.88	4,695.14	4,694.83	10.23	10.27	-22.26	-131.46	12.36	119.12	98.66	20.46	5.822		
4,800.00	4,799.37	4,793.42	4,792.81	10.40	10.46	-26.72	-135.09	19.05	116.79	95.99	20.81	5.613		
4,895.31	4,894.31	4,886.84	4,885.81	10.57	10.65	-31.82	-139.28	26.78	115.76	94.59	21.16	5.469 CC		
4,900.00	4,898.99	4,891.43	4,890.38	10.58	10.66	-32.09	-139.51	27.20	115.76	94.58	21.18	5.465 ES		
5,000.00	4,998.62	4,989.16	4,987.50	10.77	10.86	-37.99	-144.71	36.78	117.13	95.57	21.56	5.432 SF		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 313H (SIMOPS) - 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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)						
5,100.00	5,098.24	5,086.57	5,084.10	10.95	11.07	-44.10	-150.67	47.78	121.21	99.26	21.95	5.523		
5,200.00	5,197.87	5,183.58	5,180.08	11.15	11.28	-50.06	-157.39	60.16	128.14	105.81	22.33	5.737		
5,300.00	5,297.49	5,280.51	5,275.73	11.34	11.50	-55.60	-164.86	73.94	137.93	115.20	22.72	6.069		
5,400.00	5,397.12	5,379.07	5,372.90	11.54	11.74	-60.53	-172.73	88.46	149.44	126.32	23.12	6.463		
5,500.00	5,496.74	5,477.64	5,470.07	11.74	11.98	-64.73	-180.81	102.98	161.90	138.38	23.52	6.884		
5,600.00	5,596.37	5,576.20	5,567.24	11.95	12.24	-68.32	-188.48	117.50	175.10	151.18	23.92	7.320		
5,700.00	5,696.00	5,674.77	5,664.42	12.15	12.49	-71.41	-196.36	132.02	188.89	164.56	24.33	7.764		
5,800.00	5,795.62	5,773.33	5,761.59	12.37	12.76	-74.07	-204.23	146.54	203.15	178.41	24.74	8.211		
5,900.00	5,895.25	5,871.89	5,858.76	12.58	13.02	-76.38	-212.11	161.06	217.79	192.63	25.16	8.657		
6,000.00	5,994.87	5,970.46	5,955.93	12.79	13.30	-78.40	-219.98	175.58	232.72	207.15	25.58	9.099		
6,100.00	6,094.50	6,069.02	6,053.10	13.01	13.58	-80.18	-227.86	190.10	247.91	221.91	26.00	9.533		
6,200.00	6,194.12	6,167.59	6,150.27	13.23	13.86	-81.75	-235.73	204.62	263.31	236.88	26.44	9.960		
6,300.00	6,293.75	6,266.15	6,247.44	13.45	14.15	-83.14	-243.61	219.14	278.88	252.01	26.87	10.378		
6,400.00	6,393.37	6,364.71	6,344.61	13.68	14.44	-84.39	-251.48	233.66	294.59	267.28	27.31	10.786		
6,500.00	6,493.00	6,463.28	6,441.78	13.90	14.74	-85.52	-259.35	248.17	310.43	282.67	27.76	11.184		
6,600.00	6,592.62	6,561.84	6,538.95	14.13	15.04	-86.53	-267.23	262.69	326.37	298.17	28.21	11.571		
6,700.00	6,692.25	6,660.41	6,636.12	14.36	15.34	-87.45	-275.10	277.21	342.41	313.75	28.66	11.947		
6,800.00	6,791.88	6,758.97	6,733.29	14.59	15.65	-88.28	-282.98	291.73	358.52	329.40	29.12	12.313		
6,900.00	6,891.50	6,857.53	6,830.46	14.83	15.96	-89.05	-290.85	306.25	374.70	345.12	29.58	12.669		
7,000.00	6,991.13	6,956.10	6,927.63	15.06	16.27	-89.75	-298.73	320.77	390.94	360.90	30.04	13.013		
7,100.00	7,090.75	7,054.66	7,024.80	15.30	16.58	-90.40	-306.60	335.29	407.23	376.72	30.51	13.348		
7,200.00	7,190.38	7,153.22	7,121.97	15.53	16.90	-90.99	-314.48	349.81	423.57	392.59	30.98	13.673		
7,300.00	7,290.00	7,251.79	7,219.14	15.77	17.22	-91.54	-322.35	364.33	439.95	408.50	31.45	13.988		
7,400.00	7,389.63	7,350.35	7,316.31	16.01	17.54	-92.06	-330.23	378.85	456.37	424.44	31.93	14.293		
7,500.00	7,489.25	7,448.92	7,413.48	16.25	17.87	-92.53	-338.10	393.37	472.82	440.41	32.41	14.589		
7,600.00	7,588.88	7,547.48	7,510.65	16.49	18.20	-92.98	-345.97	407.89	489.29	456.40	32.89	14.876		
7,700.00	7,688.50	7,646.04	7,607.82	16.74	18.52	-93.39	-353.85	422.41	505.80	472.43	33.38	15.155		
7,800.00	7,788.13	7,744.61	7,704.99	16.98	18.85	-93.78	-361.72	436.93	522.33	488.47	33.86	15.425		
7,900.00	7,887.76	7,843.17	7,802.16	17.22	19.19	-94.15	-369.60	451.45	538.88	504.53	34.35	15.687		
8,000.00	7,987.38	7,941.74	7,899.33	17.47	19.52	-94.49	-377.47	465.97	555.46	520.61	34.84	15.942		
8,100.00	8,087.01	8,040.30	7,996.50	17.72	19.86	-94.82	-385.35	480.49	572.05	536.71	35.34	16.188		
8,200.00	8,186.63	8,138.86	8,093.67	17.96	20.19	-95.12	-393.22	495.01	588.66	552.82	35.83	16.428		
8,300.00	8,286.26	8,237.43	8,190.84	18.21	20.53	-95.41	-401.10	509.52	605.28	568.95	36.33	16.660		
8,400.00	8,385.88	8,335.99	8,288.01	18.46	20.87	-95.68	-408.97	524.04	621.92	585.09	36.83	16.886		
8,500.00	8,485.51	8,434.56	8,385.18	18.71	21.21	-95.94	-416.85	538.56	638.57	601.24	37.33	17.105		
8,600.00	8,585.15	8,533.13	8,482.36	18.96	21.56	-96.23	-424.72	553.08	655.20	617.37	37.83	17.319		
8,700.00	8,684.87	8,631.74	8,579.57	19.19	21.90	-96.45	-432.60	567.61	671.76	633.44	38.32	17.532		
8,800.00	8,784.65	8,730.37	8,676.81	19.41	22.24	-96.60	-440.48	582.14	688.21	649.42	38.80	17.739		
8,900.00	8,884.48	8,829.02	8,774.07	19.64	22.59	-96.66	-448.36	596.67	704.57	665.30	39.27	17.940		
9,000.00	8,984.35	8,927.69	8,871.34	19.86	22.94	-96.66	-456.24	611.21	720.83	681.09	39.74	18.137		
9,100.00	9,084.27	9,026.36	8,968.61	20.08	23.28	-96.60	-464.13	625.74	736.99	696.79	40.21	18.329		
9,200.00	9,184.22	9,129.63	9,070.46	20.29	23.62	-96.46	-472.26	640.74	752.85	712.19	40.66	18.514		
9,300.00	9,284.19	9,235.01	9,174.55	20.50	23.92	-96.29	-480.13	655.25	767.81	726.70	41.11	18.679		
9,400.00	9,384.18	9,340.88	9,279.05	20.70	24.21	-96.07	-487.56	668.95	781.83	740.29	41.54	18.821		
9,500.00	9,484.18	9,446.59	9,383.95	20.90	24.50	-95.82	-494.55	681.83	794.91	752.95	41.97	18.941		
9,600.00	9,584.18	9,552.76	9,489.22	21.10	24.79	-95.11	-501.09	693.89	807.10	764.71	42.39	19.041		
9,700.00	9,684.18	9,659.17	9,594.86	21.30	25.07	-94.41	-507.17	705.11	818.44	775.63	42.81	19.119		
9,800.00	9,784.18	9,765.81	9,700.85	21.50	25.34	-93.67	-512.80	715.50	828.92	785.70	43.23	19.175		
9,900.00	9,884.18	9,872.66	9,807.15	21.70	25.61	-92.91	-517.97	725.03	838.55	794.90	43.65	19.211		
10,000.00	9,983.73	9,978.86	9,912.90	21.87	25.86	-92.19	-522.65	733.64	848.70	804.69	44.02	19.281		
10,100.00	10,080.37	10,081.50	10,015.18	21.96	26.10	-91.44	-526.71	741.15	861.44	817.19	44.24	19.470		
10,200.00	10,171.17	10,177.63	10,111.04	21.99	26.32	-90.68	-530.13	747.44	877.94	833.60	44.34	19.799		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 313H (SIMOPS) - 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		
10,300.00	10,253.37	10,264.44	10,197.66	21.98	26.51	102.47	-532.88	752.52	899.93	855.57	44.36	20.288		
10,400.00	10,324.46	10,339.35	10,272.43	21.97	26.67	102.88	-535.01	756.44	929.15	884.75	44.40	20.927		
10,500.00	10,382.30	10,400.03	10,333.03	21.99	26.80	102.04	-536.56	759.30	966.93	922.31	44.62	21.671		
10,600.00	10,425.12	10,444.53	10,377.47	22.09	26.89	99.41	-537.60	761.22	1,013.77	968.63	45.14	22.458		
10,700.00	10,451.62	10,471.31	10,404.23	22.31	26.95	94.50	-538.19	762.30	1,069.09	1,023.20	45.88	23.300		
10,800.00	10,460.99	10,479.33	10,412.24	22.64	26.96	87.08	-538.36	762.61	1,131.26	1,084.84	46.42	24.371		
10,900.00	10,460.71	10,476.68	10,409.59	23.11	26.96	86.43	-538.30	762.51	1,198.48	1,151.62	46.86	25.578		
11,000.00	10,460.40	10,473.97	10,406.89	23.70	26.95	86.25	-538.24	762.40	1,270.01	1,222.58	47.44	26.774		
11,100.00	10,460.08	10,471.24	10,404.16	24.42	26.95	86.06	-538.19	762.30	1,345.18	1,297.04	48.14	27.945		
11,200.00	10,459.77	10,468.48	10,401.40	25.25	26.94	85.88	-538.13	762.19	1,423.40	1,374.45	48.95	29.079		
11,300.00	10,459.46	10,465.70	10,398.62	26.18	26.93	85.70	-538.07	762.08	1,504.20	1,454.34	49.86	30.167		
11,400.00	10,459.14	12,852.70	11,688.22	27.20	32.87	144.71	797.70	772.41	1,505.75	1,462.45	43.30	34.776		
11,500.00	10,458.83	12,952.70	11,687.99	28.30	33.91	144.71	897.70	772.41	1,505.81	1,461.19	44.62	33.747		
11,600.00	10,458.51	13,052.70	11,687.76	29.47	35.01	144.72	997.70	772.41	1,505.88	1,459.84	46.03	32.713		
11,700.00	10,458.20	13,152.70	11,687.53	30.71	36.18	144.72	1,097.70	772.41	1,505.94	1,458.42	47.53	31.686		
11,800.00	10,457.89	13,252.70	11,687.30	32.00	37.40	144.72	1,197.70	772.41	1,506.01	1,456.91	49.09	30.676		
11,900.00	10,457.57	13,352.70	11,687.07	33.35	38.66	144.72	1,297.70	772.42	1,506.07	1,455.34	50.73	29.688		
12,000.00	10,457.26	13,452.70	11,686.84	34.74	39.97	144.72	1,397.70	772.42	1,506.14	1,453.71	52.43	28.729		
12,100.00	10,456.95	13,552.70	11,686.60	36.16	41.32	144.73	1,497.70	772.42	1,506.20	1,452.02	54.18	27.802		
12,200.00	10,456.63	13,652.70	11,686.37	37.62	42.70	144.73	1,597.70	772.42	1,506.27	1,450.29	55.98	26.908		
12,300.00	10,456.32	13,752.70	11,686.14	39.12	44.12	144.73	1,697.70	772.42	1,506.33	1,448.51	57.82	26.050		
12,400.00	10,456.01	13,852.70	11,685.91	40.63	45.56	144.73	1,797.70	772.42	1,506.39	1,446.68	59.71	25.228		
12,500.00	10,455.69	13,952.70	11,685.68	42.18	47.03	144.73	1,897.70	772.42	1,506.46	1,444.82	61.64	24.441		
12,600.00	10,455.38	14,052.70	11,685.45	43.74	48.53	144.74	1,997.70	772.43	1,506.52	1,442.93	63.60	23.689		
12,700.00	10,455.07	14,152.70	11,685.22	45.33	50.05	144.74	2,097.70	772.43	1,506.59	1,441.00	65.58	22.972		
12,800.00	10,454.75	14,252.70	11,684.99	46.93	51.58	144.74	2,197.70	772.43	1,506.65	1,439.05	67.60	22.287		
12,900.00	10,454.44	14,352.70	11,684.76	48.55	53.14	144.74	2,297.70	772.43	1,506.72	1,437.07	69.65	21.634		
13,000.00	10,454.12	14,452.70	11,684.52	50.18	54.71	144.74	2,397.70	772.43	1,506.78	1,435.07	71.71	21.011		
13,100.00	10,453.81	14,552.70	11,684.29	51.83	56.29	144.75	2,497.70	772.43	1,506.85	1,433.05	73.80	20.418		
13,200.00	10,453.50	14,652.70	11,684.06	53.49	57.89	144.75	2,597.70	772.43	1,506.91	1,431.00	75.91	19.851		
13,300.00	10,453.18	14,752.70	11,683.83	55.15	59.51	144.75	2,697.70	772.44	1,506.98	1,428.94	78.04	19.311		
13,400.00	10,452.87	14,852.70	11,683.60	56.83	61.13	144.75	2,797.70	772.44	1,507.04	1,426.86	80.18	18.796		
13,500.00	10,452.56	14,952.70	11,683.37	58.52	62.77	144.75	2,897.70	772.44	1,507.11	1,424.77	82.34	18.304		
13,600.00	10,452.24	15,052.70	11,683.14	60.22	64.42	144.76	2,997.70	772.44	1,507.17	1,422.66	84.51	17.834		
13,700.00	10,451.93	15,152.70	11,682.91	61.92	66.07	144.76	3,097.70	772.44	1,507.24	1,420.54	86.69	17.386		
13,800.00	10,451.62	15,252.70	11,682.67	63.63	67.74	144.76	3,197.70	772.44	1,507.30	1,418.41	88.89	16.957		
13,900.00	10,451.30	15,352.70	11,682.44	65.34	69.41	144.76	3,297.70	772.44	1,507.37	1,416.27	91.10	16.546		
14,000.00	10,450.99	15,452.70	11,682.21	67.07	71.09	144.76	3,397.70	772.45	1,507.43	1,414.11	93.32	16.153		
14,100.00	10,450.68	15,552.70	11,681.98	68.79	72.78	144.76	3,497.70	772.45	1,507.50	1,411.95	95.55	15.777		
14,200.00	10,450.36	15,652.70	11,681.75	70.52	74.47	144.77	3,597.70	772.45	1,507.56	1,409.77	97.79	15.417		
14,300.00	10,450.05	15,752.70	11,681.52	72.26	76.17	144.77	3,697.70	772.45	1,507.63	1,407.59	100.03	15.071		
14,400.00	10,449.74	15,852.70	11,681.29	74.00	77.87	144.77	3,797.70	772.45	1,507.69	1,405.40	102.29	14.740		
14,500.00	10,449.42	15,952.70	11,681.06	75.75	79.59	144.77	3,897.70	772.45	1,507.75	1,403.21	104.55	14.422		
14,600.00	10,449.11	16,052.70	11,680.83	77.50	81.30	144.77	3,997.69	772.45	1,507.82	1,401.00	106.82	14.116		
14,700.00	10,448.79	16,152.70	11,680.59	79.25	83.02	144.78	4,097.69	772.46	1,507.88	1,398.79	109.09	13.822		
14,800.00	10,448.48	16,252.70	11,680.36	81.01	84.75	144.78	4,197.69	772.46	1,507.95	1,396.58	111.37	13.540		
14,900.00	10,448.17	16,352.70	11,680.13	82.77	86.48	144.78	4,297.69	772.46	1,508.01	1,394.36	113.66	13.268		
14,953.26	10,448.00	16,405.96	11,680.01	83.70	87.40	144.78	4,350.96	772.46	1,508.05	1,393.17	114.88	13.127		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 319H (SIMOPS) - 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		
0.00	0.00	0.00	0.00	0.00	0.00	-58.85	109.06	-180.42	210.82					
100.00	100.00	100.00	100.00	0.08	0.08	-58.85	109.06	-180.42	210.82	210.66	0.16	1,339.921		
200.00	200.00	200.00	200.00	0.30	0.30	-58.85	109.06	-180.42	210.82	210.21	0.61	347.387		
300.00	300.00	300.00	300.00	0.53	0.53	-58.85	109.06	-180.42	210.82	209.76	1.06	199.563		
400.00	400.00	400.00	400.00	0.75	0.75	-58.85	109.06	-180.42	210.82	209.31	1.51	139.992		
500.00	500.00	500.00	500.00	0.98	0.98	-58.85	109.06	-180.42	210.82	208.86	1.96	107.810		
600.00	600.00	600.00	600.00	1.20	1.20	-58.85	109.06	-180.42	210.82	208.41	2.40	87.658		
700.00	700.00	700.00	700.00	1.43	1.43	-58.85	109.06	-180.42	210.82	207.96	2.85	73.854		
800.00	800.00	800.00	800.00	1.65	1.65	-58.85	109.06	-180.42	210.82	207.51	3.30	63.806		
900.00	900.00	900.00	900.00	1.88	1.88	-58.85	109.06	-180.42	210.82	207.06	3.75	56.164		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-58.85	109.06	-180.42	210.82	206.62	4.20	50.158		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-58.85	109.06	-180.42	210.82	206.17	4.65	45.311		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-58.85	109.06	-180.42	210.82	205.72	5.10	41.319		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-58.85	109.06	-180.42	210.82	205.27	5.55	37.974		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-58.85	109.06	-180.42	210.82	204.82	6.00	35.129		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-58.85	109.06	-180.42	210.82	204.37	6.45	32.681		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-58.85	109.06	-180.42	210.82	203.92	6.90	30.552		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-58.85	109.06	-180.42	210.82	203.47	7.35	28.683		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-58.85	109.06	-180.42	210.82	203.02	7.80	27.030		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-58.85	109.06	-180.42	210.82	202.57	8.25	25.557		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-58.85	109.06	-180.42	210.82	202.12	8.70	24.236		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-58.85	109.06	-180.42	210.82	201.67	9.15	23.045		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-58.85	109.06	-180.42	210.82	201.22	9.60	21.966		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-58.85	109.06	-180.42	210.82	200.77	10.05	20.983		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-58.85	109.06	-180.42	210.82	200.32	10.50	20.084		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-58.85	109.06	-180.42	210.82	199.87	10.95	19.260		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-58.85	109.06	-180.42	210.82	199.42	11.40	18.500		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-58.85	109.06	-180.42	210.82	198.97	11.85	17.798		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-58.85	109.06	-180.42	210.82	198.52	12.29	17.147		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-58.85	109.06	-180.42	210.82	198.07	12.74	16.542		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-58.85	109.06	-180.42	210.82	197.62	13.19	15.979		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-58.85	109.06	-180.42	210.82	197.18	13.64	15.452		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-58.85	109.06	-180.42	210.82	196.73	14.09	14.959		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-58.85	109.06	-180.42	210.82	196.28	14.54	14.497		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-58.85	109.06	-180.42	210.82	195.83	14.99	14.062		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-58.85	109.06	-180.42	210.82	195.38	15.44	13.653		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-58.85	109.06	-180.42	210.82	194.93	15.89	13.267		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-58.85	109.06	-180.42	210.82	194.48	16.34	12.902		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-58.85	109.06	-180.42	210.82	194.03	16.79	12.556		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-58.85	109.06	-180.42	210.82	193.58	17.24	12.229		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-58.85	109.06	-180.42	210.82	193.13	17.69	11.918		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-58.85	109.06	-180.42	210.82	192.68	18.14	11.623		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-58.85	109.06	-180.42	210.82	192.23	18.59	11.342		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-58.85	109.06	-180.42	210.82	191.78	19.04	11.074 CC		
4,400.00	4,400.00	4,400.15	4,400.14	9.71	9.72	106.54	108.29	-180.84	211.03	191.60	19.43	10.861 ES		
4,500.00	4,499.96	4,500.29	4,500.25	9.88	9.89	106.50	105.99	-182.11	211.67	191.90	19.77	10.707		
4,600.00	4,599.86	4,600.43	4,600.29	10.06	10.06	106.44	102.16	-184.22	212.74	192.63	20.11	10.578		
4,700.00	4,699.68	4,700.56	4,700.24	10.23	10.24	106.36	96.80	-187.17	214.23	193.77	20.46	10.472		
4,800.00	4,799.37	4,800.68	4,800.05	10.40	10.42	106.26	89.91	-190.96	216.15	195.34	20.81	10.386		
4,900.00	4,898.99	4,900.78	4,899.68	10.58	10.60	105.91	81.50	-195.60	218.24	197.06	21.18	10.305		
5,000.00	4,998.62	5,000.80	4,999.06	10.77	10.79	105.13	71.56	-201.07	220.29	198.74	21.55	10.221		
5,100.00	5,098.24	5,100.69	5,098.09	10.95	10.99	103.91	60.13	-207.36	222.39	200.46	21.94	10.137		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 319H (SIMOPS) - 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		
5,200.00	5,197.87	5,200.39	5,196.69	11.15	11.20	102.27	47.22	-214.48	224.65	202.31	22.34	10.057		
5,300.00	5,297.49	5,299.83	5,294.76	11.34	11.41	100.23	32.84	-222.40	227.19	204.44	22.75	9.988		
5,400.00	5,397.12	5,399.05	5,392.33	11.54	11.64	97.84	17.04	-231.10	230.20	207.03	23.17	9.934		
5,500.00	5,496.74	5,498.48	5,490.00	11.74	11.88	95.37	0.73	-240.08	233.69	210.08	23.61	9.898		
5,600.00	5,596.37	5,597.91	5,587.67	11.95	12.13	92.97	-15.58	-249.06	237.61	213.55	24.06	9.877		
5,700.00	5,696.00	5,697.34	5,685.35	12.15	12.38	90.66	-31.89	-258.05	241.93	217.42	24.51	9.870		
5,800.00	5,795.62	5,796.78	5,783.02	12.37	12.65	88.43	-48.20	-267.03	246.64	221.66	24.97	9.876		
5,900.00	5,895.25	5,896.21	5,880.69	12.58	12.92	86.28	-84.51	-276.01	251.70	226.26	25.44	9.893		
6,000.00	5,994.87	5,995.64	5,978.37	12.79	13.20	84.22	-80.82	-284.99	257.11	231.20	25.92	9.921		
6,100.00	6,094.50	6,095.07	6,076.04	13.01	13.49	82.25	-97.13	-293.98	262.84	236.45	26.39	9.959		
6,200.00	6,194.12	6,194.51	6,173.71	13.23	13.78	80.37	-113.44	-302.96	268.87	241.99	26.87	10.005		
6,300.00	6,293.75	6,293.94	6,271.39	13.45	14.08	78.57	-129.75	-311.94	275.17	247.82	27.36	10.059		
6,400.00	6,393.37	6,393.37	6,369.06	13.68	14.38	76.85	-146.06	-320.92	281.74	253.90	27.84	10.120		
6,500.00	6,493.00	6,492.80	6,466.74	13.90	14.69	75.20	-162.37	-329.91	288.55	260.22	28.33	10.187		
6,600.00	6,592.62	6,592.24	6,564.41	14.13	15.00	73.64	-178.68	-338.89	295.58	266.77	28.81	10.259		
6,700.00	6,692.25	6,691.67	6,662.08	14.36	15.32	72.15	-194.99	-347.87	302.83	273.53	29.30	10.335		
6,800.00	6,791.88	6,791.10	6,759.76	14.59	15.64	70.73	-211.30	-356.86	310.27	280.48	29.79	10.416		
6,900.00	6,891.50	6,890.54	6,857.43	14.83	15.97	69.38	-227.61	-365.84	317.89	287.62	30.28	10.500		
7,000.00	6,991.13	6,989.97	6,955.10	15.06	16.30	68.08	-243.91	-374.82	325.69	294.92	30.76	10.587		
7,100.00	7,090.75	7,089.40	7,052.78	15.30	16.63	66.86	-260.22	-383.80	333.63	302.38	31.25	10.676		
7,200.00	7,190.38	7,190.66	7,152.28	15.53	16.97	65.69	-276.65	-392.85	341.60	309.86	31.74	10.762		
7,300.00	7,290.00	7,294.19	7,254.30	15.77	17.28	64.76	-292.06	-401.34	348.72	316.49	32.22	10.821		
7,400.00	7,389.63	7,398.01	7,356.92	16.01	17.58	64.09	-305.90	-408.96	354.75	322.04	32.71	10.845		
7,500.00	7,489.25	7,502.05	7,460.02	16.25	17.87	63.68	-318.12	-415.69	359.64	326.44	33.20	10.833		
7,600.00	7,588.88	7,606.26	7,563.52	16.49	18.15	63.50	-328.72	-421.53	363.37	329.68	33.69	10.785		
7,700.00	7,688.50	7,710.55	7,667.31	16.74	18.42	63.55	-337.67	-426.46	365.91	331.73	34.18	10.704		
7,800.00	7,788.13	7,814.86	7,771.29	16.98	18.67	63.82	-344.97	-430.48	367.27	332.59	34.68	10.590		
7,900.00	7,887.76	7,919.13	7,875.35	17.22	18.91	64.32	-350.61	-433.58	367.47	332.29	35.18	10.447		
8,000.00	7,987.38	8,023.27	7,979.39	17.47	19.14	65.05	-354.58	-435.77	366.54	330.87	35.67	10.275		
8,100.00	8,087.01	8,127.23	8,083.31	17.72	19.35	66.01	-356.90	-437.05	364.54	328.37	36.17	10.078		
8,200.00	8,186.63	8,230.55	8,186.63	17.96	19.55	67.21	-357.57	-437.42	361.55	324.88	36.67	9.859		
8,300.00	8,286.26	8,330.18	8,286.26	18.21	19.73	68.48	-357.57	-437.42	358.28	321.12	37.16	9.641		
8,400.00	8,385.88	8,430.38	8,386.46	18.46	19.92	69.79	-357.49	-437.42	355.18	317.53	37.66	9.432		
8,500.00	8,485.51	8,533.30	8,488.66	18.71	20.05	72.91	-346.58	-437.42	351.63	313.47	38.16	9.216		
8,595.09	8,580.26	8,622.48	8,574.43	18.94	20.07	77.96	-322.48	-437.42	349.67	311.09	38.58	9.063		
8,600.00	8,585.15	8,626.77	8,578.46	18.96	20.07	78.27	-320.99	-437.42	349.66	311.06	38.60	9.058 SF		
8,700.00	8,684.87	8,708.27	8,652.46	19.19	20.03	84.70	-287.01	-437.42	353.72	314.77	38.95	9.081		
8,800.00	8,784.65	8,777.59	8,711.08	19.41	19.96	91.18	-250.09	-437.42	367.86	328.65	39.21	9.381		
8,900.00	8,884.48	8,835.92	8,756.65	19.64	19.88	97.11	-213.73	-437.42	394.47	355.06	39.41	10.009		
9,000.00	8,984.35	8,884.92	8,791.92	19.86	19.81	102.26	-179.73	-437.42	433.77	394.19	39.57	10.961		
9,100.00	9,084.27	8,926.27	8,819.33	20.08	19.74	106.63	-148.79	-437.42	484.37	444.65	39.72	12.196		
9,200.00	9,184.22	8,961.42	8,840.83	20.29	19.69	110.32	-120.98	-437.42	544.26	504.41	39.85	13.657		
9,300.00	9,284.19	9,000.00	8,862.41	20.50	19.63	114.21	-89.01	-437.42	611.57	571.60	39.97	15.301		
9,400.00	9,384.18	9,017.71	8,871.58	20.70	19.61	116.20	-73.86	-437.42	684.30	644.18	40.13	17.053		
9,500.00	9,484.18	9,050.00	8,887.09	20.90	19.56	119.34	-45.55	-437.42	761.63	721.38	40.25	18.924		
9,600.00	9,584.18	9,050.00	8,887.09	21.10	19.56	-45.97	-45.55	-437.42	842.32	801.87	40.44	20.826		
9,700.00	9,684.18	9,078.14	8,899.29	21.30	19.52	-43.84	-20.19	-437.43	925.71	885.13	40.58	22.812		
9,800.00	9,784.18	9,100.00	8,907.89	21.50	19.49	-42.26	-0.10	-437.43	1,011.63	970.90	40.73	24.836		
9,900.00	9,884.18	9,100.00	8,907.89	21.70	19.49	-42.26	-0.10	-437.43	1,099.38	1,058.45	40.94	26.856		
10,000.00	9,983.73	9,121.94	8,915.75	21.87	19.46	-41.29	20.38	-437.43	1,185.56	1,145.01	40.55	29.237		
10,100.00	10,080.37	9,150.00	8,924.65	21.96	19.43	-24.29	46.99	-437.43	1,265.60	1,226.21	39.39	32.130		
10,200.00	10,171.17	9,150.00	8,924.65	21.99	19.43	-20.34	46.99	-437.43	1,337.66	1,300.10	37.56	35.617		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 319H (SIMOPS) - 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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
10,300.00	10,253.37	9,200.00	8,937.25	21.98	19.38	-17.18	95.36	-437.43	1,400.71	1,365.62	35.09	39.916		
10,400.00	10,324.46	9,200.00	8,937.25	21.97	19.38	-15.45	95.36	-437.43	1,453.16	1,420.81	32.35	44.919		
10,500.00	10,382.30	9,250.00	8,945.57	21.99	19.36	-14.05	144.65	-437.43	1,495.10	1,465.49	29.61	50.499		
10,600.00	10,425.12	9,250.00	8,945.57	22.09	19.36	-13.31	144.65	-437.43	1,525.05	1,497.76	27.29	55.882		
10,700.00	10,451.62	9,300.00	8,949.58	22.31	19.48	-12.81	194.47	-437.43	1,543.21	1,517.26	25.95	59.458		
10,800.00	10,460.99	9,320.91	8,949.96	22.64	19.55	-12.68	215.38	-437.43	1,548.94	1,523.08	25.87	59.885		
10,900.00	10,460.71	9,400.42	8,949.96	23.11	19.90	-12.68	294.89	-437.43	1,548.53	1,522.17	26.36	58.738		
11,000.00	10,460.40	9,500.42	8,949.96	23.70	20.46	-12.69	394.88	-437.43	1,548.23	1,521.24	26.99	57.363		
11,100.00	10,460.08	9,600.42	8,949.96	24.42	21.14	-12.69	494.88	-437.44	1,547.92	1,520.22	27.70	55.883		
11,200.00	10,459.77	9,700.41	8,949.96	25.25	21.95	-12.69	594.88	-437.44	1,547.62	1,519.13	28.49	54.329		
11,300.00	10,459.46	9,800.41	8,949.96	26.18	22.88	-12.69	694.88	-437.44	1,547.31	1,517.97	29.34	52.731		
11,400.00	10,459.14	9,900.41	8,949.96	27.20	23.90	-12.70	794.88	-437.44	1,547.01	1,516.74	30.27	51.115		
11,500.00	10,458.83	10,000.41	8,949.96	28.30	25.01	-12.70	894.88	-437.45	1,546.70	1,515.45	31.25	49.501		
11,600.00	10,458.51	10,100.41	8,949.97	29.47	26.20	-12.70	994.88	-437.45	1,546.39	1,514.12	32.28	47.907		
11,700.00	10,458.20	10,200.41	8,949.97	30.71	27.46	-12.71	1,094.88	-437.45	1,546.09	1,512.73	33.36	46.344		
11,800.00	10,457.89	10,300.41	8,949.97	32.00	28.78	-12.71	1,194.88	-437.45	1,545.78	1,511.30	34.49	44.822		
11,900.00	10,457.57	10,400.41	8,949.97	33.35	30.15	-12.71	1,294.88	-437.46	1,545.48	1,509.83	35.65	43.348		
12,000.00	10,457.26	10,500.41	8,949.97	34.74	31.56	-12.71	1,394.88	-437.46	1,545.17	1,508.32	36.85	41.927		
12,100.00	10,456.95	10,600.41	8,949.97	36.16	33.02	-12.72	1,494.88	-437.46	1,544.87	1,506.78	38.09	40.561		
12,200.00	10,456.63	10,700.41	8,949.97	37.62	34.51	-12.72	1,594.88	-437.46	1,544.56	1,505.21	39.35	39.251		
12,300.00	10,456.32	10,800.41	8,949.97	39.12	36.03	-12.72	1,694.88	-437.46	1,544.26	1,503.62	40.64	37.997		
12,400.00	10,456.01	10,900.41	8,949.97	40.63	37.58	-12.73	1,794.88	-437.47	1,543.95	1,502.00	41.96	36.799		
12,500.00	10,455.69	11,000.41	8,949.98	42.18	39.15	-12.73	1,894.88	-437.47	1,543.65	1,500.36	43.29	35.655		
12,600.00	10,455.38	11,100.41	8,949.98	43.74	40.75	-12.73	1,994.88	-437.47	1,543.34	1,498.69	44.65	34.565		
12,700.00	10,455.07	11,200.41	8,949.98	45.33	42.36	-12.73	2,094.88	-437.47	1,543.04	1,497.01	46.03	33.525		
12,800.00	10,454.75	11,300.41	8,949.98	46.93	43.99	-12.74	2,194.88	-437.48	1,542.73	1,495.31	47.42	32.534		
12,900.00	10,454.44	11,400.41	8,949.98	48.55	45.64	-12.74	2,294.88	-437.48	1,542.43	1,493.60	48.83	31.589		
13,000.00	10,454.12	11,500.41	8,949.98	50.18	47.29	-12.74	2,394.87	-437.48	1,542.12	1,491.87	50.25	30.689		
13,100.00	10,453.81	11,600.41	8,949.98	51.83	48.96	-12.75	2,494.87	-437.48	1,541.82	1,490.13	51.69	29.831		
13,200.00	10,453.50	11,700.40	8,949.98	53.49	50.64	-12.75	2,594.87	-437.49	1,541.51	1,488.38	53.13	29.013		
13,300.00	10,453.18	11,800.40	8,949.98	55.15	52.33	-12.75	2,694.87	-437.49	1,541.21	1,486.62	54.59	28.232		
13,400.00	10,452.87	11,900.40	8,949.98	56.83	54.03	-12.75	2,794.87	-437.49	1,540.90	1,484.84	56.06	27.487		
13,500.00	10,452.56	12,000.40	8,949.99	58.52	55.74	-12.76	2,894.87	-437.49	1,540.60	1,483.06	57.54	26.775		
13,600.00	10,452.24	12,100.40	8,949.99	60.22	57.45	-12.76	2,994.87	-437.49	1,540.29	1,481.27	59.03	26.095		
13,700.00	10,451.93	12,200.40	8,949.99	61.92	59.18	-12.76	3,094.87	-437.50	1,539.99	1,479.47	60.52	25.445		
13,800.00	10,451.62	12,300.40	8,949.99	63.63	60.90	-12.77	3,194.87	-437.50	1,539.68	1,477.66	62.02	24.824		
13,900.00	10,451.30	12,400.40	8,949.99	65.34	62.64	-12.77	3,294.87	-437.50	1,539.38	1,475.84	63.53	24.229		
14,000.00	10,450.99	12,500.40	8,949.99	67.07	64.37	-12.77	3,394.87	-437.50	1,539.07	1,474.02	65.05	23.660		
14,100.00	10,450.68	12,600.40	8,949.99	68.79	66.12	-12.77	3,494.87	-437.51	1,538.77	1,472.19	66.57	23.114		
14,200.00	10,450.36	12,700.40	8,949.99	70.52	67.86	-12.78	3,594.87	-437.51	1,538.46	1,470.36	68.10	22.590		
14,300.00	10,450.05	12,800.40	8,949.99	72.26	69.62	-12.78	3,694.87	-437.51	1,538.16	1,468.52	69.64	22.088		
14,400.00	10,449.74	12,900.40	8,949.99	74.00	71.37	-12.78	3,794.87	-437.51	1,537.85	1,466.68	71.18	21.607		
14,500.00	10,449.42	13,000.40	8,950.00	75.75	73.13	-12.79	3,894.87	-437.52	1,537.55	1,464.83	72.72	21.144		
14,600.00	10,449.11	13,100.40	8,950.00	77.50	74.89	-12.79	3,994.87	-437.52	1,537.24	1,462.98	74.27	20.699		
14,700.00	10,448.79	13,200.40	8,950.00	79.25	76.66	-12.79	4,094.87	-437.52	1,536.94	1,461.12	75.82	20.271		
14,800.00	10,448.48	13,300.40	8,950.00	81.01	78.43	-12.79	4,194.87	-437.52	1,536.63	1,459.26	77.38	19.859		
14,900.00	10,448.17	13,400.40	8,950.00	82.77	80.20	-12.80	4,294.87	-437.52	1,536.33	1,457.39	78.94	19.463		
14,953.26	10,448.00	13,452.65	8,950.00	83.70	81.12	-12.80	4,347.12	-437.53	1,536.17	1,456.41	79.76	19.260		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 320H (SIMOPS) - 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		
0.00	0.00	0.00	0.00	0.00	0.00	-71.86	59.06	-180.27	189.70					
100.00	100.00	100.00	100.00	0.08	0.08	-71.86	59.06	-180.27	189.70	189.54	0.16	1,205.711		
200.00	200.00	200.00	200.00	0.30	0.30	-71.86	59.06	-180.27	189.70	189.10	0.61	312.592		
300.00	300.00	300.00	300.00	0.53	0.53	-71.86	59.06	-180.27	189.70	188.65	1.06	179.574		
400.00	400.00	400.00	400.00	0.75	0.75	-71.86	59.06	-180.27	189.70	188.20	1.51	125.970		
500.00	500.00	500.00	500.00	0.98	0.98	-71.86	59.06	-180.27	189.70	187.75	1.96	97.011		
600.00	600.00	600.00	600.00	1.20	1.20	-71.86	59.06	-180.27	189.70	187.30	2.40	78.878		
700.00	700.00	700.00	700.00	1.43	1.43	-71.86	59.06	-180.27	189.70	186.85	2.85	66.457		
800.00	800.00	800.00	800.00	1.65	1.65	-71.86	59.06	-180.27	189.70	186.40	3.30	57.415		
900.00	900.00	900.00	900.00	1.88	1.88	-71.86	59.06	-180.27	189.70	185.95	3.75	50.539		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-71.86	59.06	-180.27	189.70	185.50	4.20	45.134		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-71.86	59.06	-180.27	189.70	185.05	4.65	40.773		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-71.86	59.06	-180.27	189.70	184.60	5.10	37.181		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-71.86	59.06	-180.27	189.70	184.15	5.55	34.170		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-71.86	59.06	-180.27	189.70	183.70	6.00	31.610		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-71.86	59.06	-180.27	189.70	183.25	6.45	29.408		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-71.86	59.06	-180.27	189.70	182.80	6.90	27.492		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-71.86	59.06	-180.27	189.70	182.35	7.35	25.810		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-71.86	59.06	-180.27	189.70	181.90	7.80	24.323		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-71.86	59.06	-180.27	189.70	181.45	8.25	22.997		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-71.86	59.06	-180.27	189.70	181.00	8.70	21.809		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-71.86	59.06	-180.27	189.70	180.55	9.15	20.737		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-71.86	59.06	-180.27	189.70	180.10	9.60	19.766		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-71.86	59.06	-180.27	189.70	179.66	10.05	18.881		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-71.86	59.06	-180.27	189.70	179.21	10.50	18.073		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-71.86	59.06	-180.27	189.70	178.76	10.95	17.331		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-71.86	59.06	-180.27	189.70	178.31	11.40	16.647		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-71.86	59.06	-180.27	189.70	177.86	11.85	16.015		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-71.86	59.06	-180.27	189.70	177.41	12.29	15.430		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-71.86	59.06	-180.27	189.70	176.96	12.74	14.885		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-71.86	59.06	-180.27	189.70	176.51	13.19	14.378		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-71.86	59.06	-180.27	189.70	176.06	13.64	13.904		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-71.86	59.06	-180.27	189.70	175.61	14.09	13.461		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-71.86	59.06	-180.27	189.70	175.16	14.54	13.045		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-71.86	59.06	-180.27	189.70	174.71	14.99	12.654		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-71.86	59.06	-180.27	189.70	174.26	15.44	12.285		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-71.86	59.06	-180.27	189.70	173.81	15.89	11.938		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-71.86	59.06	-180.27	189.70	173.36	16.34	11.609		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-71.86	59.06	-180.27	189.70	172.91	16.79	11.299		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-71.86	59.06	-180.27	189.70	172.46	17.24	11.004		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-71.86	59.06	-180.27	189.70	172.01	17.69	10.724		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-71.86	59.06	-180.27	189.70	171.56	18.14	10.458		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-71.86	59.06	-180.27	189.70	171.11	18.59	10.206		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-71.86	59.06	-180.27	189.70	170.66	19.04	9.965		
4,400.00	4,400.00	4,403.39	4,403.39	9.71	9.73	93.79	58.68	-179.42	188.86	169.42	19.44	9.713		
4,500.00	4,499.96	4,506.70	4,506.66	9.88	9.92	94.56	57.54	-176.87	186.36	166.55	19.80	9.411		
4,600.00	4,599.86	4,609.84	4,609.69	10.06	10.12	95.88	55.64	-172.63	182.25	162.09	20.16	9.038		
4,700.00	4,699.68	4,712.74	4,712.38	10.23	10.32	97.83	52.99	-166.71	176.68	156.15	20.53	8.606		
4,800.00	4,799.37	4,815.31	4,814.62	10.40	10.52	100.51	49.60	-159.14	169.81	148.91	20.90	8.125		
4,900.00	4,898.99	4,917.55	4,916.35	10.58	10.72	103.65	45.48	-149.92	161.72	140.44	21.28	7.601		
5,000.00	4,998.62	5,019.44	5,017.55	10.77	10.94	107.20	40.64	-139.10	152.38	130.72	21.66	7.036		
5,100.00	5,098.24	5,120.93	5,118.13	10.95	11.16	111.32	35.09	-126.68	141.94	119.89	22.04	6.439		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 320H (SIMOPS) - 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		
5,200.00	5,197.87	5,219.79	5,215.96	11.15	11.38	118.05	29.31	-113.76	131.43	109.00	22.43	5.860		
5,300.00	5,297.49	5,318.59	5,313.75	11.34	11.61	121.54	23.54	-100.86	121.96	99.14	22.82	5.344		
5,400.00	5,397.12	5,417.39	5,411.54	11.54	11.84	127.88	17.76	-87.95	113.81	90.58	23.23	4.900		
5,500.00	5,496.74	5,516.20	5,509.32	11.74	12.08	135.07	11.99	-75.04	107.27	83.63	23.64	4.538		
5,600.00	5,596.37	5,615.00	5,607.11	11.95	12.32	143.03	6.22	-62.13	102.84	78.57	24.07	4.265		
5,700.00	5,696.00	5,713.81	5,704.90	12.15	12.57	151.54	0.44	-49.22	100.20	75.69	24.51	4.088		
5,754.19	5,749.98	5,767.34	5,757.88	12.27	12.70	156.27	-2.69	-42.22	99.85	75.09	24.75	4.034 CC, ES		
5,800.00	5,795.62	5,812.61	5,802.68	12.37	12.82	160.27	-5.33	-36.31	100.10	75.13	24.96	4.010 SF		
5,900.00	5,895.25	5,911.41	5,900.47	12.58	13.08	168.81	-11.11	-23.40	102.35	76.92	25.43	4.025		
6,000.00	5,994.87	6,010.22	5,998.25	12.79	13.34	176.83	-16.88	-10.49	106.80	80.91	25.89	4.124		
6,100.00	6,094.50	6,109.02	6,096.04	13.01	13.60	-175.91	-22.65	2.42	113.19	86.83	26.36	4.293		
6,200.00	6,194.12	6,207.82	6,193.83	13.23	13.87	-169.50	-28.43	15.33	121.23	94.39	26.83	4.518		
6,300.00	6,293.75	6,306.63	6,291.61	13.45	14.14	-163.94	-34.20	28.24	130.59	103.29	27.30	4.783		
6,400.00	6,393.37	6,405.43	6,389.40	13.68	14.41	-159.15	-39.98	41.15	141.02	113.25	27.77	5.078		
6,500.00	6,493.00	6,504.24	6,487.19	13.90	14.69	-155.04	-45.75	54.06	152.30	124.07	28.24	5.393		
6,600.00	6,592.62	6,603.04	6,584.97	14.13	14.97	-151.50	-51.52	66.97	164.26	135.55	28.71	5.722		
6,700.00	6,692.25	6,701.84	6,682.76	14.36	15.25	-148.45	-57.30	79.87	176.75	147.58	29.18	6.058		
6,800.00	6,791.88	6,800.65	6,780.55	14.59	15.53	-145.80	-63.07	92.78	189.68	160.03	29.65	6.398		
6,900.00	6,891.50	6,899.45	6,878.33	14.83	15.82	-143.50	-68.85	105.69	202.95	172.83	30.12	6.739		
7,000.00	6,991.13	6,998.26	6,976.12	15.06	16.11	-141.48	-74.62	118.60	216.51	185.92	30.59	7.077		
7,100.00	7,090.75	7,097.06	7,073.91	15.30	16.40	-139.69	-80.39	131.51	230.30	199.24	31.07	7.413		
7,200.00	7,190.38	7,195.86	7,171.69	15.53	16.69	-138.11	-86.17	144.42	244.29	212.75	31.55	7.744		
7,300.00	7,290.00	7,294.67	7,269.48	15.77	16.99	-136.70	-91.94	157.33	258.44	226.42	32.03	8.070		
7,400.00	7,389.63	7,393.76	7,367.56	16.01	17.28	-135.44	-97.73	170.27	272.72	240.22	32.51	8.390		
7,500.00	7,489.25	7,495.58	7,468.48	16.25	17.54	-134.45	-103.24	182.58	286.51	253.54	32.96	8.692		
7,600.00	7,588.88	7,597.80	7,570.02	16.49	17.79	-133.83	-108.03	193.29	299.31	265.89	33.42	8.956		
7,700.00	7,688.50	7,700.36	7,672.09	16.74	18.04	-133.53	-112.09	202.38	311.07	277.19	33.88	9.183		
7,800.00	7,788.13	7,803.18	7,774.59	16.98	18.27	-133.52	-115.41	209.81	321.77	287.44	34.33	9.373		
7,900.00	7,887.76	7,906.22	7,877.43	17.22	18.50	-133.76	-117.99	215.57	331.41	296.63	34.78	9.528		
8,000.00	7,987.38	8,009.40	7,980.51	17.47	18.71	-134.25	-119.81	219.65	339.99	304.76	35.23	9.650		
8,100.00	8,087.01	8,112.65	8,083.73	17.72	18.92	-134.95	-120.88	222.03	347.55	311.88	35.68	9.742		
8,200.00	8,186.63	8,215.55	8,186.63	17.96	19.11	-135.88	-121.19	222.73	354.14	318.03	36.11	9.808		
8,300.00	8,286.26	8,315.18	8,286.26	18.21	19.29	-136.83	-121.19	222.73	360.41	323.87	36.54	9.863		
8,400.00	8,385.88	8,412.50	8,383.57	18.46	19.49	-137.74	-121.15	222.73	366.80	329.83	36.98	9.920		
8,500.00	8,485.51	8,484.88	8,455.70	18.71	19.62	-139.07	-115.76	222.73	377.49	340.14	37.34	10.109		
8,600.00	8,585.15	8,550.00	8,519.56	18.96	19.72	-141.18	-103.17	222.72	395.67	357.99	37.67	10.502		
8,700.00	8,684.87	8,616.92	8,583.26	19.19	19.81	-144.02	-82.78	222.72	421.41	383.43	37.98	11.097		
8,800.00	8,784.65	8,674.69	8,636.02	19.41	19.87	-146.87	-59.30	222.72	455.05	416.80	38.25	11.898		
8,900.00	8,884.48	8,726.62	8,681.21	19.64	19.92	-149.62	-33.76	222.72	496.45	457.96	38.50	12.896		
9,000.00	8,984.35	8,772.96	8,719.44	19.86	19.96	-152.15	-7.60	222.72	545.11	506.38	38.74	14.073		
9,100.00	9,084.27	8,814.17	8,751.57	20.08	19.99	-154.42	18.20	222.72	600.27	561.31	38.96	15.406		
9,200.00	9,184.22	8,850.00	8,777.93	20.29	20.02	-156.37	42.46	222.72	661.08	621.89	39.19	16.870		
9,300.00	9,284.19	8,883.44	8,801.12	20.50	20.05	-158.17	66.54	222.71	726.70	687.30	39.40	18.445		
9,400.00	9,384.18	8,900.00	8,812.08	20.70	20.07	-159.12	78.96	222.71	796.61	757.00	39.62	20.108		
9,500.00	9,484.18	8,950.00	8,842.92	20.90	20.11	-161.55	118.30	222.71	869.66	829.84	39.82	21.838		
9,600.00	9,584.18	8,950.00	8,842.92	21.10	20.11	33.03	118.30	222.71	945.82	905.79	40.03	23.628		
9,700.00	9,684.18	8,983.05	8,861.37	21.30	20.15	31.63	145.71	222.71	1,024.63	984.39	40.24	25.461		
9,800.00	9,784.18	9,000.00	8,870.21	21.50	20.17	30.93	160.17	222.71	1,106.09	1,065.65	40.44	27.350		
9,900.00	9,884.18	9,018.69	8,879.46	21.70	20.19	30.18	176.41	222.71	1,189.62	1,148.97	40.65	29.263		
10,000.00	9,983.73	9,050.00	8,893.75	21.87	20.25	23.27	204.27	222.71	1,271.22	1,230.68	40.84	31.356		
10,100.00	10,080.37	9,050.00	8,893.75	21.96	20.25	19.35	204.27	222.71	1,344.58	1,304.99	39.59	33.959		
10,200.00	10,171.17	9,078.76	8,905.51	21.99	20.30	16.42	230.51	222.71	1,408.97	1,371.13	37.84	37.231		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 320H (SIMOPS) - 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		
10,300.00	10,253.37	9,100.00	8,913.35	21.98	20.35	14.54	250.25	222.70	1,463.25	1,427.80	35.45	41.274		
10,400.00	10,324.46	9,128.19	8,922.61	21.97	20.43	13.26	276.87	222.70	1,506.53	1,473.87	32.67	46.118		
10,500.00	10,382.30	9,150.00	8,928.87	21.99	20.50	12.45	297.76	222.70	1,538.23	1,508.42	29.81	51.599		
10,600.00	10,425.12	9,181.31	8,936.46	22.09	20.62	11.97	328.14	222.70	1,557.83	1,530.49	27.35	56.964		
10,700.00	10,451.62	9,200.00	8,940.19	22.31	20.70	11.80	346.45	222.70	1,565.22	1,539.46	25.76	60.769		
10,800.00	10,460.99	9,250.00	8,947.23	22.64	20.95	11.93	395.93	222.70	1,560.26	1,534.68	25.58	60.994		
10,900.00	10,460.71	9,250.00	8,947.23	23.11	20.95	11.95	395.93	222.70	1,550.27	1,524.46	25.81	60.071		
11,000.00	10,460.40	9,300.00	8,949.93	23.70	21.25	11.97	445.85	222.69	1,544.87	1,518.65	26.22	58.922		
11,100.00	10,460.08	9,349.07	8,949.96	24.42	21.58	11.97	494.91	222.69	1,543.69	1,517.01	26.68	57.864		
11,200.00	10,459.77	9,449.07	8,949.96	25.25	22.34	11.97	594.91	222.68	1,543.37	1,516.00	27.37	56.386		
11,300.00	10,459.46	9,549.07	8,949.96	26.18	23.23	11.97	694.91	222.68	1,543.06	1,514.92	28.14	54.830		
11,400.00	10,459.14	9,649.07	8,949.96	27.20	24.23	11.98	794.91	222.67	1,542.75	1,513.77	28.98	53.226		
11,500.00	10,458.83	9,749.06	8,949.96	28.30	25.31	11.98	894.91	222.67	1,542.44	1,512.55	29.89	51.600		
11,600.00	10,458.51	9,849.06	8,949.96	29.47	26.48	11.98	994.91	222.66	1,542.13	1,511.28	30.86	49.974		
11,700.00	10,458.20	9,949.06	8,949.96	30.71	27.72	11.98	1,094.91	222.65	1,541.82	1,509.95	31.88	48.365		
11,800.00	10,457.89	10,049.06	8,949.97	32.00	29.02	11.98	1,194.91	222.65	1,541.51	1,508.57	32.95	46.787		
11,900.00	10,457.57	10,149.06	8,949.97	33.35	30.37	11.99	1,294.91	222.64	1,541.20	1,507.14	34.06	45.249		
12,000.00	10,457.26	10,249.06	8,949.97	34.74	31.77	11.99	1,394.91	222.64	1,540.89	1,505.68	35.21	43.759		
12,100.00	10,456.95	10,349.06	8,949.97	36.16	33.22	11.99	1,494.91	222.63	1,540.58	1,504.18	36.40	42.322		
12,200.00	10,456.63	10,449.06	8,949.97	37.62	34.69	11.99	1,594.91	222.63	1,540.27	1,502.65	37.62	40.940		
12,300.00	10,456.32	10,549.06	8,949.97	39.12	36.20	11.99	1,694.91	222.62	1,539.96	1,501.09	38.87	39.615		
12,400.00	10,456.01	10,649.06	8,949.97	40.63	37.74	12.00	1,794.91	222.61	1,539.65	1,499.50	40.15	38.347		
12,500.00	10,455.69	10,749.06	8,949.97	42.18	39.30	12.00	1,894.90	222.61	1,539.34	1,497.89	41.45	37.136		
12,600.00	10,455.38	10,849.06	8,949.97	43.74	40.89	12.00	1,994.90	222.60	1,539.03	1,496.26	42.78	35.980		
12,700.00	10,455.07	10,949.06	8,949.98	45.33	42.49	12.00	2,094.90	222.60	1,538.72	1,494.60	44.12	34.877		
12,800.00	10,454.75	11,049.06	8,949.98	46.93	44.11	12.00	2,194.90	222.59	1,538.41	1,492.93	45.48	33.826		
12,900.00	10,454.44	11,149.06	8,949.98	48.55	45.75	12.01	2,294.90	222.59	1,538.10	1,491.24	46.86	32.824		
13,000.00	10,454.12	11,249.06	8,949.98	50.18	47.40	12.01	2,394.90	222.58	1,537.79	1,489.54	48.25	31.869		
13,100.00	10,453.81	11,349.06	8,949.98	51.83	49.06	12.01	2,494.90	222.57	1,537.48	1,487.82	49.66	30.960		
13,200.00	10,453.50	11,449.06	8,949.98	53.49	50.74	12.01	2,594.90	222.57	1,537.17	1,486.09	51.08	30.092		
13,300.00	10,453.18	11,549.06	8,949.98	55.15	52.42	12.01	2,694.90	222.56	1,536.86	1,484.35	52.51	29.265		
13,400.00	10,452.87	11,649.06	8,949.98	56.83	54.11	12.02	2,794.90	222.56	1,536.55	1,482.59	53.96	28.477		
13,500.00	10,452.56	11,749.05	8,949.98	58.52	55.81	12.02	2,894.90	222.55	1,536.24	1,480.83	55.41	27.724		
13,600.00	10,452.24	11,849.05	8,949.99	60.22	57.52	12.02	2,994.90	222.54	1,535.93	1,479.06	56.88	27.005		
13,700.00	10,451.93	11,949.05	8,949.99	61.92	59.24	12.02	3,094.90	222.54	1,535.62	1,477.27	58.35	26.319		
13,800.00	10,451.62	12,049.05	8,949.99	63.63	60.96	12.02	3,194.90	222.53	1,535.31	1,475.48	59.83	25.663		
13,900.00	10,451.30	12,149.05	8,949.99	65.34	62.69	12.03	3,294.90	222.53	1,535.00	1,473.69	61.31	25.035		
14,000.00	10,450.99	12,249.05	8,949.99	67.07	64.43	12.03	3,394.90	222.52	1,534.69	1,471.88	62.81	24.435		
14,100.00	10,450.68	12,349.05	8,949.99	68.79	66.16	12.03	3,494.90	222.52	1,534.38	1,470.07	64.31	23.860		
14,200.00	10,450.36	12,449.05	8,949.99	70.52	67.91	12.03	3,594.90	222.51	1,534.07	1,468.26	65.82	23.309		
14,300.00	10,450.05	12,549.05	8,949.99	72.26	69.66	12.03	3,694.90	222.50	1,533.76	1,466.43	67.33	22.781		
14,400.00	10,449.74	12,649.05	8,949.99	74.00	71.41	12.04	3,794.90	222.50	1,533.45	1,464.60	68.85	22.274		
14,500.00	10,449.42	12,749.05	8,950.00	75.75	73.16	12.04	3,894.89	222.49	1,533.14	1,462.77	70.37	21.788		
14,600.00	10,449.11	12,849.05	8,950.00	77.50	74.92	12.04	3,994.89	222.49	1,532.83	1,460.94	71.89	21.320		
14,700.00	10,448.79	12,949.05	8,950.00	79.25	76.69	12.04	4,094.89	222.48	1,532.52	1,459.09	73.43	20.872		
14,800.00	10,448.48	13,049.05	8,950.00	81.01	78.45	12.04	4,194.89	222.47	1,532.21	1,457.25	74.96	20.440		
14,900.00	10,448.17	13,149.05	8,950.00	82.77	80.22	12.05	4,294.89	222.47	1,531.90	1,455.40	76.50	20.024		
14,953.26	10,448.00	13,202.31	8,950.00	83.70	81.16	12.05	4,348.15	222.47	1,531.73	1,454.41	77.32	19.810		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 321H (SIMOPS) - 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		
0.00	0.00	0.00	0.00	0.00	0.00	179.82	-74.98	0.23	74.98					
100.00	100.00	100.00	100.00	0.08	0.08	179.82	-74.98	0.23	74.98	74.82	0.16	476.561		
200.00	200.00	200.00	200.00	0.30	0.30	179.82	-74.98	0.23	74.98	74.37	0.61	123.553		
300.00	300.00	300.00	300.00	0.53	0.53	179.82	-74.98	0.23	74.98	73.92	1.06	70.977		
400.00	400.00	400.00	400.00	0.75	0.75	179.82	-74.98	0.23	74.98	73.47	1.51	49.790		
500.00	500.00	500.00	500.00	0.98	0.98	179.82	-74.98	0.23	74.98	73.02	1.96	38.344		
600.00	600.00	600.00	600.00	1.20	1.20	179.82	-74.98	0.23	74.98	72.58	2.40	31.177		
700.00	700.00	700.00	700.00	1.43	1.43	179.82	-74.98	0.23	74.98	72.13	2.85	26.267		
800.00	800.00	800.00	800.00	1.65	1.65	179.82	-74.98	0.23	74.98	71.68	3.30	22.693		
900.00	900.00	900.00	900.00	1.88	1.88	179.82	-74.98	0.23	74.98	71.23	3.75	19.976		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.82	-74.98	0.23	74.98	70.78	4.20	17.839		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.82	-74.98	0.23	74.98	70.33	4.65	16.116		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.82	-74.98	0.23	74.98	69.88	5.10	14.696		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.82	-74.98	0.23	74.98	69.43	5.55	13.506		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.82	-74.98	0.23	74.98	68.98	6.00	12.494		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.82	-74.98	0.23	74.98	68.53	6.45	11.623		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.82	-74.98	0.23	74.98	68.08	6.90	10.866		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.82	-74.98	0.23	74.98	67.63	7.35	10.202		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.82	-74.98	0.23	74.98	67.18	7.80	9.614		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.82	-74.98	0.23	74.98	66.73	8.25	9.090		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.82	-74.98	0.23	74.98	66.28	8.70	8.620		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.82	-74.98	0.23	74.98	65.83	9.15	8.196		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.82	-74.98	0.23	74.98	65.38	9.60	7.812		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.82	-74.98	0.23	74.98	64.93	10.05	7.463		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.82	-74.98	0.23	74.98	64.48	10.50	7.143		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.82	-74.98	0.23	74.98	64.03	10.95	6.850		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.82	-74.98	0.23	74.98	63.58	11.40	6.580		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.82	-74.98	0.23	74.98	63.14	11.85	6.330		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.82	-74.98	0.23	74.98	62.69	12.29	6.099		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.82	-74.98	0.23	74.98	62.24	12.74	5.883		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.82	-74.98	0.23	74.98	61.79	13.19	5.683		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.82	-74.98	0.23	74.98	61.34	13.64	5.496		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.82	-74.98	0.23	74.98	60.89	14.09	5.320		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.82	-74.98	0.23	74.98	60.44	14.54	5.156		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.82	-74.98	0.23	74.98	59.99	14.99	5.001		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.82	-74.98	0.23	74.98	59.54	15.44	4.856		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.82	-74.98	0.23	74.98	59.09	15.89	4.718		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.82	-74.98	0.23	74.98	58.64	16.34	4.589		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.82	-74.98	0.23	74.98	58.19	16.79	4.466		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.82	-74.98	0.23	74.98	57.74	17.24	4.349		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.82	-74.98	0.23	74.98	57.29	17.69	4.239		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.82	-74.98	0.23	74.98	56.84	18.14	4.134		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.82	-74.98	0.23	74.98	56.39	18.59	4.034		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.82	-74.98	0.23	74.98	55.94	19.04	3.939		
4,400.00	4,400.00	4,399.58	4,399.58	9.71	9.72	-15.59	-75.25	1.05	74.41	54.98	19.44	3.829		
4,500.00	4,499.96	4,499.08	4,499.04	9.88	9.91	-18.07	-76.04	3.52	72.80	53.02	19.79	3.680		
4,600.00	4,599.86	4,598.41	4,598.27	10.06	10.10	-22.44	-77.36	7.63	70.44	50.30	20.13	3.498		
4,700.00	4,699.68	4,697.48	4,697.16	10.23	10.30	-28.99	-79.20	13.35	67.87	47.39	20.49	3.313		
4,800.00	4,799.37	4,796.21	4,795.59	10.40	10.49	-37.94	-81.56	20.67	65.99	45.14	20.85	3.166		
4,832.95	4,832.19	4,828.67	4,827.92	10.46	10.56	-41.33	-82.45	23.43	65.81	44.83	20.97	3.138 CC, ES, SF		
4,900.00	4,898.99	4,894.61	4,893.54	10.58	10.69	-48.53	-84.43	29.57	66.62	45.39	21.23	3.138		
5,000.00	4,998.62	4,992.67	4,990.99	10.77	10.90	-59.20	-87.79	40.04	71.02	49.40	21.62	3.285		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 321H (SIMOPS) - 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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,098.24	5,090.35	5,087.84	10.95	11.11	-68.71	-91.66	52.04	79.25	57.24	22.00	3.601		
5,200.00	5,197.87	5,187.57	5,184.03	11.15	11.33	-76.45	-96.00	65.54	90.94	68.55	22.39	4.061		
5,300.00	5,297.49	5,284.31	5,279.47	11.34	11.56	-82.42	-100.82	80.51	105.60	82.83	22.78	4.636		
5,400.00	5,397.12	5,380.49	5,374.10	11.54	11.80	-86.90	-106.11	96.92	122.81	99.64	23.17	5.300		
5,500.00	5,496.74	5,476.08	5,467.84	11.74	12.05	-90.21	-111.84	114.73	142.22	118.65	23.57	6.035		
5,600.00	5,596.37	5,571.03	5,560.63	11.95	12.31	-92.66	-118.00	133.88	163.61	139.64	23.97	6.827		
5,700.00	5,696.00	5,667.18	5,654.32	12.15	12.59	-94.52	-124.63	154.47	186.51	162.13	24.37	7.652		
5,800.00	5,795.62	5,764.34	5,748.96	12.37	12.89	-95.98	-131.36	175.37	209.67	184.88	24.79	8.458		
5,900.00	5,895.25	5,861.50	5,843.60	12.58	13.19	-97.15	-138.09	196.28	232.93	207.72	25.21	9.239		
6,000.00	5,994.87	5,958.65	5,938.25	12.79	13.51	-98.11	-144.82	217.18	256.27	230.63	25.64	9.996		
6,100.00	6,094.50	6,055.81	6,032.89	13.01	13.83	-98.90	-151.55	238.09	279.66	253.59	26.07	10.727		
6,200.00	6,194.12	6,152.97	6,127.53	13.23	14.16	-99.58	-158.28	259.00	303.10	276.59	26.51	11.434		
6,300.00	6,293.75	6,250.13	6,222.17	13.45	14.50	-100.16	-165.01	279.90	326.57	299.62	26.95	12.116		
6,400.00	6,393.37	6,347.28	6,316.82	13.68	14.84	-100.66	-171.74	300.81	350.07	322.67	27.40	12.776		
6,500.00	6,493.00	6,444.44	6,411.46	13.90	15.19	-101.09	-178.47	321.71	373.59	345.74	27.85	13.412		
6,600.00	6,592.62	6,541.60	6,506.10	14.13	15.55	-101.48	-185.20	342.62	397.13	368.82	28.31	14.027		
6,700.00	6,692.25	6,638.75	6,600.74	14.36	15.92	-101.82	-191.93	363.52	420.69	391.91	28.77	14.621		
6,800.00	6,791.88	6,735.91	6,695.39	14.59	16.28	-102.13	-198.66	384.43	444.26	415.02	29.24	15.194		
6,900.00	6,891.50	6,833.07	6,790.03	14.83	16.66	-102.40	-205.39	405.34	467.83	438.13	29.71	15.748		
7,000.00	6,991.13	6,930.23	6,884.67	15.06	17.03	-102.65	-212.12	426.24	491.42	461.24	30.18	16.282		
7,100.00	7,090.75	7,027.38	6,979.31	15.30	17.42	-102.88	-218.85	447.15	515.02	484.36	30.66	16.799		
7,200.00	7,190.38	7,124.54	7,073.96	15.53	17.80	-103.09	-225.58	468.05	538.62	507.48	31.14	17.298		
7,300.00	7,290.00	7,221.70	7,168.60	15.77	18.19	-103.27	-232.31	488.96	562.23	530.61	31.62	17.780		
7,400.00	7,389.63	7,318.86	7,263.24	16.01	18.59	-103.45	-239.04	509.87	585.84	553.73	32.11	18.247		
7,500.00	7,489.25	7,416.01	7,357.88	16.25	18.98	-103.61	-245.76	530.77	609.46	576.86	32.60	18.698		
7,600.00	7,588.88	7,513.17	7,452.53	16.49	19.38	-103.76	-252.49	551.68	633.08	600.00	33.09	19.134		
7,700.00	7,688.50	7,610.33	7,547.17	16.74	19.78	-103.89	-259.22	572.58	656.71	623.13	33.58	19.556		
7,800.00	7,788.13	7,707.48	7,641.81	16.98	20.19	-104.02	-265.95	593.49	680.34	646.26	34.08	19.964		
7,900.00	7,887.76	7,804.64	7,736.45	17.22	20.60	-104.14	-272.68	614.39	703.97	669.39	34.58	20.359		
8,000.00	7,987.38	7,901.80	7,831.09	17.47	21.01	-104.25	-279.41	635.30	727.61	692.53	35.08	20.742		
8,100.00	8,087.01	7,998.96	7,925.74	17.72	21.42	-104.36	-286.14	656.21	751.24	715.66	35.58	21.112		
8,200.00	8,186.63	8,096.11	8,020.38	17.96	21.83	-104.46	-292.87	677.11	774.88	738.79	36.09	21.471		
8,300.00	8,286.26	8,193.27	8,115.02	18.21	22.25	-104.55	-299.60	698.02	798.53	761.93	36.60	21.819		
8,400.00	8,385.88	8,290.43	8,209.66	18.46	22.67	-104.64	-306.33	718.92	822.17	785.06	37.11	22.156		
8,500.00	8,485.51	8,387.59	8,304.31	18.71	23.09	-104.72	-313.06	739.83	845.82	808.20	37.62	22.483		
8,600.00	8,585.15	8,483.10	8,397.42	18.96	23.48	-105.00	-317.77	760.40	869.45	831.32	38.12	22.806		
8,700.00	8,684.87	8,574.42	8,486.13	19.19	23.80	-106.09	-309.39	779.99	893.34	854.75	38.59	23.150		
8,800.00	8,784.65	8,659.34	8,566.48	19.41	24.05	-107.84	-288.74	797.74	918.19	879.17	39.02	23.532		
8,900.00	8,884.48	8,735.55	8,635.36	19.64	24.23	-109.97	-260.04	812.96	945.01	905.60	39.41	23.980		
9,000.00	8,984.35	8,800.00	8,690.28	19.86	24.37	-112.14	-228.64	825.09	974.83	935.07	39.76	24.517		
9,100.00	9,084.27	8,860.08	8,738.08	20.08	24.48	-114.42	-193.85	835.64	1,008.47	968.38	40.09	25.153		
9,200.00	9,184.22	8,909.73	8,774.72	20.29	24.56	-116.51	-161.36	843.74	1,046.46	1,006.07	40.40	25.903		
9,300.00	9,284.19	8,950.00	8,802.33	20.50	24.62	-118.33	-132.70	849.84	1,089.06	1,048.38	40.68	26.769		
9,400.00	9,384.18	9,000.00	8,833.77	20.70	24.69	-120.64	-94.47	856.78	1,136.34	1,095.36	40.98	27.732		
9,500.00	9,484.18	9,021.31	8,846.16	20.90	24.72	-121.79	-77.35	859.52	1,187.89	1,146.66	41.22	28.818		
9,600.00	9,584.18	9,050.00	8,861.84	21.10	24.76	71.54	-53.58	862.98	1,243.83	1,202.37	41.46	29.999		
9,700.00	9,684.18	9,073.38	8,873.74	21.30	24.79	70.53	-33.63	865.61	1,303.99	1,262.32	41.67	31.292		
9,800.00	9,784.18	9,100.00	8,886.32	21.50	24.84	69.36	-10.34	868.39	1,368.03	1,326.10	41.93	32.630		
9,900.00	9,884.18	9,100.00	8,886.32	21.70	24.84	69.36	-10.34	868.39	1,435.65	1,393.52	42.13	34.077		
10,000.00	9,983.73	9,132.24	8,900.11	21.87	24.88	59.96	18.64	871.44	1,503.71	1,460.93	42.78	35.149		
10,100.00	10,080.37	9,150.00	8,907.03	21.96	24.91	52.38	34.93	872.96	1,568.39	1,525.62	42.77	36.674		
10,200.00	10,171.17	9,179.66	8,917.46	21.99	24.96	46.16	62.59	875.27	1,627.60	1,585.62	41.98	38.769		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 321H (SIMOPS) - 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		
10,300.00	10,253.37	9,200.00	8,923.80	21.98	24.99	41.59	81.87	876.87	1,679.89	1,639.50	40.39	41.590		
10,400.00	10,324.46	9,250.00	8,936.52	21.97	25.09	37.94	130.12	879.48	1,724.08	1,685.87	38.21	45.120		
10,500.00	10,382.30	9,250.00	8,936.52	21.99	25.09	35.71	130.12	879.48	1,758.88	1,722.96	35.93	48.956		
10,600.00	10,425.12	9,300.00	8,945.08	22.09	25.20	34.02	179.33	881.37	1,783.57	1,749.62	33.95	52.533		
10,700.00	10,451.62	9,326.10	8,947.88	22.31	25.26	33.16	205.28	881.99	1,797.96	1,765.14	32.82	54.789		
10,800.00	10,460.99	9,350.00	8,949.42	22.64	25.33	32.95	229.12	882.33	1,801.67	1,768.80	32.88	54.803		
10,900.00	10,460.71	9,415.77	8,950.00	23.11	25.54	32.97	294.88	882.46	1,800.69	1,767.17	33.52	53.713		
11,000.00	10,460.40	9,515.77	8,950.00	23.70	25.97	32.97	394.88	882.46	1,800.42	1,765.99	34.44	52.282		
11,100.00	10,460.08	9,615.77	8,950.00	24.42	26.54	32.98	494.88	882.46	1,800.16	1,764.68	35.48	50.738		
11,200.00	10,459.77	9,715.77	8,950.00	25.25	27.24	32.99	594.88	882.46	1,799.89	1,763.25	36.64	49.122		
11,300.00	10,459.46	9,815.77	8,950.00	26.18	28.06	32.99	694.88	882.46	1,799.63	1,761.71	37.91	47.469		
11,400.00	10,459.14	9,915.77	8,950.00	27.20	28.99	33.00	794.88	882.46	1,799.36	1,760.08	39.28	45.808		
11,500.00	10,458.83	10,015.76	8,950.00	28.30	30.02	33.00	894.87	882.46	1,799.09	1,758.36	40.74	44.163		
11,600.00	10,458.51	10,115.76	8,950.00	29.47	31.13	33.01	994.87	882.46	1,798.83	1,756.55	42.27	42.551		
11,700.00	10,458.20	10,215.76	8,950.00	30.71	32.31	33.01	1,094.87	882.46	1,798.56	1,754.68	43.88	40.986		
11,800.00	10,457.89	10,315.76	8,950.00	32.00	33.55	33.02	1,194.87	882.46	1,798.29	1,752.74	45.55	39.476		
11,900.00	10,457.57	10,415.76	8,950.00	33.35	34.85	33.02	1,294.87	882.46	1,798.03	1,750.75	47.28	38.026		
12,000.00	10,457.26	10,515.76	8,950.00	34.74	36.20	33.03	1,394.87	882.46	1,797.76	1,748.70	49.06	36.641		
12,100.00	10,456.95	10,615.76	8,950.00	36.16	37.58	33.03	1,494.87	882.46	1,797.50	1,746.61	50.89	35.321		
12,200.00	10,456.63	10,715.76	8,950.00	37.62	39.01	33.04	1,594.87	882.46	1,797.23	1,744.47	52.76	34.065		
12,300.00	10,456.32	10,815.76	8,950.00	39.12	40.47	33.04	1,694.87	882.46	1,796.96	1,742.30	54.66	32.873		
12,400.00	10,456.01	10,915.76	8,950.00	40.63	41.96	33.05	1,794.87	882.46	1,796.70	1,740.10	56.60	31.743		
12,500.00	10,455.69	11,015.76	8,950.00	42.18	43.47	33.05	1,894.87	882.46	1,796.43	1,737.86	58.57	30.671		
12,600.00	10,455.38	11,115.76	8,950.00	43.74	45.01	33.06	1,994.87	882.46	1,796.17	1,735.60	60.57	29.656		
12,700.00	10,455.07	11,215.76	8,950.00	45.33	46.57	33.06	2,094.87	882.46	1,795.90	1,733.31	62.59	28.695		
12,800.00	10,454.75	11,315.76	8,950.00	46.93	48.15	33.07	2,194.87	882.46	1,795.64	1,731.01	64.63	27.783		
12,900.00	10,454.44	11,415.76	8,950.00	48.55	49.74	33.08	2,294.87	882.46	1,795.37	1,728.68	66.69	26.920		
13,000.00	10,454.12	11,515.76	8,950.00	50.18	51.35	33.08	2,394.87	882.46	1,795.10	1,726.33	68.78	26.101		
13,100.00	10,453.81	11,615.76	8,950.00	51.83	52.98	33.09	2,494.87	882.46	1,794.84	1,723.96	70.87	25.324		
13,200.00	10,453.50	11,715.76	8,950.00	53.49	54.61	33.09	2,594.87	882.46	1,794.57	1,721.58	72.99	24.587		
13,300.00	10,453.18	11,815.76	8,950.00	55.15	56.26	33.10	2,694.87	882.46	1,794.31	1,719.19	75.12	23.886		
13,400.00	10,452.87	11,915.76	8,950.00	56.83	57.92	33.10	2,794.87	882.46	1,794.04	1,716.78	77.26	23.220		
13,500.00	10,452.56	12,015.75	8,950.00	58.52	59.59	33.11	2,894.86	882.46	1,793.77	1,714.36	79.42	22.587		
13,600.00	10,452.24	12,115.75	8,950.00	60.22	61.27	33.11	2,994.86	882.46	1,793.51	1,711.93	81.58	21.984		
13,700.00	10,451.93	12,215.75	8,950.00	61.92	62.96	33.12	3,094.86	882.46	1,793.24	1,709.49	83.76	21.410		
13,800.00	10,451.62	12,315.75	8,950.00	63.63	64.65	33.12	3,194.86	882.46	1,792.98	1,707.03	85.94	20.862		
13,900.00	10,451.30	12,415.75	8,950.00	65.34	66.35	33.13	3,294.86	882.46	1,792.71	1,704.57	88.14	20.340		
14,000.00	10,450.99	12,515.75	8,950.00	67.07	68.06	33.13	3,394.86	882.46	1,792.45	1,702.10	90.34	19.841		
14,100.00	10,450.68	12,615.75	8,950.00	68.79	69.78	33.14	3,494.86	882.46	1,792.18	1,699.63	92.55	19.364		
14,200.00	10,450.36	12,715.75	8,950.00	70.52	71.50	33.14	3,594.86	882.46	1,791.91	1,697.14	94.77	18.908		
14,300.00	10,450.05	12,815.75	8,950.00	72.26	73.22	33.15	3,694.86	882.46	1,791.65	1,694.65	96.99	18.472		
14,400.00	10,449.74	12,915.75	8,950.00	74.00	74.95	33.16	3,794.86	882.46	1,791.38	1,692.16	99.23	18.054		
14,500.00	10,449.42	13,015.75	8,950.00	75.75	76.68	33.16	3,894.86	882.46	1,791.12	1,689.65	101.46	17.653		
14,600.00	10,449.11	13,115.75	8,950.00	77.50	78.42	33.17	3,994.86	882.46	1,790.85	1,687.15	103.71	17.269		
14,700.00	10,448.79	13,215.75	8,950.00	79.25	80.17	33.17	4,094.86	882.46	1,790.59	1,684.63	105.95	16.900		
14,800.00	10,448.48	13,315.75	8,950.00	81.01	81.91	33.18	4,194.86	882.46	1,790.32	1,682.11	108.21	16.545		
14,900.00	10,448.17	13,415.75	8,950.00	82.77	83.66	33.18	4,294.86	882.46	1,790.06	1,679.59	110.46	16.205		
14,953.26	10,448.00	13,469.01	8,950.00	83.70	84.59	33.18	4,348.12	882.46	1,789.91	1,678.24	111.67	16.029		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 327H (SIMOPS) - 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)				
0.00	0.00	0.00	0.00	0.00	0.00	-53.40	134.06	-180.49	224.83					
100.00	100.00	100.00	100.00	0.08	0.08	-53.40	134.06	-180.49	224.83	224.67	0.16	1,428.971		
200.00	200.00	200.00	200.00	0.30	0.30	-53.40	134.06	-180.49	224.83	224.22	0.61	370.474		
300.00	300.00	300.00	300.00	0.53	0.53	-53.40	134.06	-180.49	224.83	223.77	1.06	212.826		
400.00	400.00	400.00	400.00	0.75	0.75	-53.40	134.06	-180.49	224.83	223.32	1.51	149.296		
500.00	500.00	500.00	500.00	0.98	0.98	-53.40	134.06	-180.49	224.83	222.87	1.96	114.975		
600.00	600.00	600.00	600.00	1.20	1.20	-53.40	134.06	-180.49	224.83	222.42	2.40	93.484		
700.00	700.00	700.00	700.00	1.43	1.43	-53.40	134.06	-180.49	224.83	221.97	2.85	78.762		
800.00	800.00	800.00	800.00	1.65	1.65	-53.40	134.06	-180.49	224.83	221.53	3.30	68.046		
900.00	900.00	900.00	900.00	1.88	1.88	-53.40	134.06	-180.49	224.83	221.08	3.75	59.897		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-53.40	134.06	-180.49	224.83	220.63	4.20	53.491		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-53.40	134.06	-180.49	224.83	220.18	4.65	48.323		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-53.40	134.06	-180.49	224.83	219.73	5.10	44.065		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-53.40	134.06	-180.49	224.83	219.28	5.55	40.497		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-53.40	134.06	-180.49	224.83	218.83	6.00	37.464		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-53.40	134.06	-180.49	224.83	218.38	6.45	34.853		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-53.40	134.06	-180.49	224.83	217.93	6.90	32.582		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-53.40	134.06	-180.49	224.83	217.48	7.35	30.590		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-53.40	134.06	-180.49	224.83	217.03	7.80	28.827		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-53.40	134.06	-180.49	224.83	216.58	8.25	27.256		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-53.40	134.06	-180.49	224.83	216.13	8.70	25.847		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-53.40	134.06	-180.49	224.83	215.68	9.15	24.577		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-53.40	134.06	-180.49	224.83	215.23	9.60	23.426		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-53.40	134.06	-180.49	224.83	214.78	10.05	22.378		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-53.40	134.06	-180.49	224.83	214.33	10.50	21.419		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-53.40	134.06	-180.49	224.83	213.88	10.95	20.540		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-53.40	134.06	-180.49	224.83	213.43	11.40	19.729		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-53.40	134.06	-180.49	224.83	212.98	11.85	18.981		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-53.40	134.06	-180.49	224.83	212.53	12.29	18.287		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-53.40	134.06	-180.49	224.83	212.09	12.74	17.642		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-53.40	134.06	-180.49	224.83	211.64	13.19	17.041		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-53.40	134.06	-180.49	224.83	211.19	13.64	16.479		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-53.40	134.06	-180.49	224.83	210.74	14.09	15.953		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-53.40	134.06	-180.49	224.83	210.29	14.54	15.460		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-53.40	134.06	-180.49	224.83	209.84	14.99	14.997		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-53.40	134.06	-180.49	224.83	209.39	15.44	14.560		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-53.40	134.06	-180.49	224.83	208.94	15.89	14.148		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-53.40	134.06	-180.49	224.83	208.49	16.34	13.759		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-53.40	134.06	-180.49	224.83	208.04	16.79	13.391		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-53.40	134.06	-180.49	224.83	207.59	17.24	13.041		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-53.40	134.06	-180.49	224.83	207.14	17.69	12.710		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-53.40	134.06	-180.49	224.83	206.69	18.14	12.395		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-53.40	134.06	-180.49	224.83	206.24	18.59	12.095		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-53.40	134.06	-180.49	224.83	205.79	19.04	11.810		
4,400.00	4,400.00	4,403.01	4,403.01	9.71	9.72	112.06	133.15	-180.30	224.49	205.05	19.43	11.552		
4,500.00	4,499.96	4,506.01	4,505.97	9.88	9.89	112.23	130.43	-179.74	223.46	203.68	19.77	11.301		
4,600.00	4,599.86	4,608.99	4,608.84	10.06	10.07	112.53	125.90	-178.81	221.75	201.63	20.12	11.023		
4,700.00	4,699.68	4,711.94	4,711.59	10.23	10.25	112.96	119.56	-177.51	219.36	198.90	20.46	10.720		
4,800.00	4,799.37	4,814.84	4,814.15	10.40	10.43	113.51	111.42	-175.83	216.32	195.50	20.82	10.392		
4,900.00	4,898.99	4,917.69	4,916.49	10.58	10.62	113.94	101.48	-173.79	212.24	191.06	21.18	10.021		
5,000.00	4,998.62	5,020.42	5,018.52	10.77	10.81	114.06	89.75	-171.38	206.80	185.25	21.55	9.596		
5,100.00	5,098.24	5,120.51	5,117.81	10.95	11.00	113.99	77.29	-168.82	200.53	178.61	21.92	9.147		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 327H (SIMOPS) - 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 +N-/S (usft)	Centre +E-/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor	
5,200.00	5,197.87	5,220.32	5,216.80	11.15	11.20	113.91	64.85	-166.26	194.26	171.96	22.31	8.709		
5,300.00	5,297.49	5,320.12	5,315.79	11.34	11.41	113.82	52.42	-163.71	187.99	165.30	22.69	8.284		
5,400.00	5,397.12	5,419.92	5,414.78	11.54	11.62	113.73	39.98	-161.15	181.72	158.63	23.09	7.871		
5,500.00	5,496.74	5,519.73	5,513.77	11.74	11.84	113.64	27.54	-158.59	175.45	151.96	23.49	7.470		
5,600.00	5,596.37	5,619.53	5,612.77	11.95	12.06	113.53	15.11	-156.04	169.18	145.29	23.89	7.080		
5,700.00	5,696.00	5,719.33	5,711.76	12.15	12.29	113.42	2.67	-153.48	162.91	138.61	24.31	6.702		
5,800.00	5,795.62	5,819.13	5,810.75	12.37	12.52	113.30	-9.77	-150.92	156.65	131.92	24.73	6.335		
5,900.00	5,895.25	5,918.94	5,909.74	12.58	12.75	113.17	-22.20	-148.37	150.38	125.23	25.15	5.980		
6,000.00	5,994.87	6,018.74	6,008.73	12.79	12.99	113.03	-34.64	-145.81	144.11	118.54	25.58	5.634		
6,100.00	6,094.50	6,118.54	6,107.72	13.01	13.23	112.88	-47.08	-143.25	137.85	111.84	26.01	5.299		
6,200.00	6,194.12	6,218.35	6,206.72	13.23	13.48	112.71	-59.51	-140.70	131.58	105.13	26.45	4.975		
6,300.00	6,293.75	6,318.15	6,305.71	13.45	13.73	112.52	-71.95	-138.14	125.32	98.43	26.89	4.660		
6,400.00	6,393.37	6,417.95	6,404.70	13.68	13.98	112.31	-84.39	-135.58	119.06	91.72	27.34	4.354		
6,500.00	6,493.00	6,517.75	6,503.69	13.90	14.23	112.09	-96.82	-133.03	112.80	85.01	27.79	4.058		
6,600.00	6,592.62	6,617.56	6,602.68	14.13	14.49	111.83	-109.26	-130.47	106.54	78.29	28.25	3.771		
6,700.00	6,692.25	6,717.36	6,701.68	14.36	14.75	111.54	-121.70	-127.91	100.29	71.57	28.71	3.493		
6,800.00	6,791.88	6,817.16	6,800.67	14.59	15.01	111.22	-134.13	-125.36	94.03	64.85	29.18	3.223		
6,900.00	6,891.50	6,916.97	6,899.66	14.83	15.28	110.85	-146.57	-122.80	87.79	58.13	29.65	2.961		
7,000.00	6,991.13	7,016.77	6,998.65	15.06	15.55	110.42	-159.01	-120.25	81.54	51.41	30.13	2.706		
7,100.00	7,090.75	7,116.57	7,097.64	15.30	15.82	109.92	-171.44	-117.69	75.30	44.69	30.61	2.460		
7,200.00	7,190.38	7,215.78	7,196.10	15.53	16.08	109.57	-183.41	-115.23	69.36	38.27	31.09	2.231		
7,300.00	7,290.00	7,314.84	7,294.59	15.77	16.33	110.17	-193.77	-113.10	64.61	33.06	31.55	2.048		
7,400.00	7,389.63	7,413.96	7,393.31	16.01	16.58	111.97	-202.46	-111.31	61.13	29.16	31.98	1.912		
7,500.00	7,489.25	7,513.09	7,492.18	16.25	16.81	115.05	-209.48	-109.87	59.06	26.70	32.37	1.825		
7,577.27	7,566.23	7,589.67	7,568.63	16.44	16.99	118.25	-213.76	-108.99	58.55	25.91	32.64	1.794 CC		
7,600.00	7,588.88	7,612.18	7,591.12	16.49	17.04	119.31	-214.82	-108.77	58.60	25.88	32.72	1.791 ES, SF		
7,700.00	7,688.50	7,711.16	7,690.03	16.74	17.26	124.44	-218.49	-108.02	59.96	26.92	33.04	1.815		
7,800.00	7,788.13	7,809.98	7,788.82	16.98	17.47	129.93	-220.47	-107.61	63.37	30.02	33.35	1.900		
7,900.00	7,887.76	7,908.91	7,887.76	17.22	17.66	135.27	-220.87	-107.53	68.85	35.20	33.65	2.046		
8,000.00	7,987.38	8,008.54	7,987.38	17.47	17.86	139.90	-220.87	-107.53	75.25	41.26	33.99	2.214		
8,100.00	8,087.01	8,104.62	8,083.45	17.72	18.05	143.82	-220.26	-107.53	82.71	48.37	34.35	2.408		
8,200.00	8,186.63	8,189.66	8,167.80	17.96	18.17	148.53	-210.05	-107.53	101.29	66.63	34.66	2.922		
8,300.00	8,286.26	8,268.10	8,243.48	18.21	18.22	152.85	-189.68	-107.53	133.93	98.96	34.97	3.830		
8,400.00	8,385.88	8,338.12	8,308.14	18.46	18.24	155.94	-162.90	-107.53	178.93	143.66	35.27	5.073		
8,500.00	8,485.51	8,400.00	8,362.18	18.71	18.23	158.01	-132.83	-107.53	234.13	198.56	35.57	6.583		
8,600.00	8,585.15	8,450.00	8,403.28	18.96	18.22	159.40	-104.39	-107.53	297.33	261.48	35.85	8.294		
8,700.00	8,684.87	8,500.00	8,441.75	19.19	18.20	160.52	-72.47	-107.53	366.46	330.34	36.12	10.145		
8,800.00	8,784.65	8,537.35	8,468.59	19.41	18.20	161.25	-46.50	-107.53	440.25	403.87	36.38	12.102		
8,900.00	8,884.48	8,571.74	8,491.76	19.64	18.19	161.84	-21.10	-107.53	517.75	481.13	36.63	14.136		
9,000.00	8,984.35	8,600.00	8,509.63	19.86	18.19	162.32	0.79	-107.53	598.21	561.35	36.87	16.227		
9,100.00	9,084.27	8,628.27	8,526.41	20.08	18.20	162.76	23.55	-107.53	681.04	643.94	37.10	18.357		
9,200.00	9,184.22	8,650.00	8,538.52	20.29	18.21	163.12	41.58	-107.53	765.80	728.47	37.32	20.517		
9,300.00	9,284.19	8,672.65	8,550.42	20.50	18.22	163.48	60.85	-107.53	852.12	814.57	37.55	22.696		
9,400.00	9,384.18	8,700.00	8,563.75	20.70	18.25	163.84	84.73	-107.53	939.85	902.08	37.77	24.886		
9,500.00	9,484.18	8,700.00	8,563.75	20.90	18.25	164.10	84.73	-107.53	1,028.54	990.57	37.97	27.090		
9,600.00	9,584.18	8,723.81	8,574.42	21.10	18.28	-1.20	106.01	-107.53	1,118.18	1,079.99	38.18	29.284		
9,700.00	9,684.18	8,750.00	8,585.13	21.30	18.31	-1.14	129.91	-107.53	1,209.20	1,170.79	38.41	31.484		
9,800.00	9,784.18	8,750.00	8,585.13	21.50	18.31	-1.14	129.91	-107.53	1,300.76	1,262.14	38.62	33.683		
9,900.00	9,884.18	8,750.00	8,585.13	21.70	18.31	-1.14	129.91	-107.53	1,393.48	1,354.65	38.83	35.889		
10,000.00	9,983.73	8,773.71	8,593.87	21.87	18.36	-0.78	151.95	-107.53	1,483.33	1,444.81	38.52	38.505		
10,100.00	10,080.37	8,800.00	8,602.48	21.96	18.41	-0.59	176.79	-107.53	1,565.99	1,528.59	37.41	41.864		
10,200.00	10,171.17	8,800.00	8,602.48	21.99	18.41	-0.48	176.79	-107.53	1,639.39	1,603.84	35.55	46.114		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 327H (SIMOPS) - 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)				
10,300.00	10,253.37	8,826.65	8,610.04	21.98	18.49	-0.41	202.34	-107.53	1,702.53	1,669.40	33.14	51.381		
10,400.00	10,324.46	8,850.00	8,615.68	21.97	18.55	-0.37	225.00	-107.53	1,754.43	1,724.06	30.37	57.768		
10,500.00	10,382.30	8,870.26	8,619.83	21.99	18.62	-0.34	244.82	-107.53	1,794.22	1,766.65	27.57	65.073		
10,600.00	10,425.12	8,900.00	8,624.64	22.09	18.73	-0.32	274.17	-107.53	1,821.39	1,796.21	25.18	72.321		
10,700.00	10,451.62	8,900.00	8,624.64	22.31	18.73	-0.32	274.17	-107.53	1,835.73	1,812.11	23.62	77.706		
10,800.00	10,460.99	8,950.00	8,629.27	22.64	18.94	-0.31	323.94	-107.53	1,836.30	1,812.82	23.48	78.210		
10,900.00	10,460.71	8,964.52	8,629.80	23.11	19.01	-0.32	338.45	-107.53	1,831.46	1,807.72	23.74	77.155		
11,000.00	10,460.40	9,020.97	8,629.96	23.70	19.31	-0.32	394.90	-107.53	1,830.47	1,806.33	24.14	75.837		
11,100.00	10,460.08	9,120.97	8,629.96	24.42	19.95	-0.32	494.90	-107.53	1,830.15	1,805.43	24.73	74.020		
11,200.00	10,459.77	9,220.97	8,629.96	25.25	20.73	-0.32	594.90	-107.53	1,829.84	1,804.45	25.39	72.080		
11,300.00	10,459.46	9,320.97	8,629.96	26.18	21.63	-0.32	694.89	-107.53	1,829.52	1,803.41	26.11	70.057		
11,400.00	10,459.14	9,420.96	8,629.96	27.20	22.65	-0.32	794.89	-107.53	1,829.21	1,802.30	26.90	67.990		
11,500.00	10,458.83	9,520.96	8,629.96	28.30	23.76	-0.32	894.89	-107.53	1,828.89	1,801.14	27.75	65.907		
11,600.00	10,458.51	9,620.96	8,629.96	29.47	24.95	-0.32	994.89	-107.53	1,828.58	1,799.93	28.65	63.836		
11,700.00	10,458.20	9,720.96	8,629.97	30.71	26.22	-0.32	1,094.89	-107.53	1,828.26	1,798.68	29.59	61.794		
11,800.00	10,457.89	9,820.96	8,629.97	32.00	27.56	-0.32	1,194.89	-107.53	1,827.95	1,797.38	30.57	59.798		
11,900.00	10,457.57	9,920.96	8,629.97	33.35	28.94	-0.32	1,294.89	-107.53	1,827.63	1,796.05	31.59	57.857		
12,000.00	10,457.26	10,020.96	8,629.97	34.74	30.37	-0.32	1,394.89	-107.53	1,827.32	1,794.68	32.64	55.980		
12,100.00	10,456.95	10,120.96	8,629.97	36.16	31.85	-0.32	1,494.89	-107.53	1,827.00	1,793.28	33.73	54.171		
12,200.00	10,456.63	10,220.96	8,629.97	37.62	33.36	-0.32	1,594.89	-107.53	1,826.69	1,791.85	34.84	52.434		
12,300.00	10,456.32	10,320.96	8,629.97	39.12	34.89	-0.32	1,694.89	-107.53	1,826.38	1,790.40	35.97	50.768		
12,400.00	10,456.01	10,420.96	8,629.97	40.63	36.46	-0.32	1,794.89	-107.53	1,826.06	1,788.93	37.13	49.174		
12,500.00	10,455.69	10,520.96	8,629.97	42.18	38.05	-0.32	1,894.89	-107.53	1,825.75	1,787.43	38.31	47.651		
12,600.00	10,455.38	10,620.96	8,629.98	43.74	39.66	-0.32	1,994.89	-107.53	1,825.43	1,785.92	39.51	46.197		
12,700.00	10,455.07	10,720.96	8,629.98	45.33	41.29	-0.32	2,094.89	-107.53	1,825.12	1,784.39	40.73	44.810		
12,800.00	10,454.75	10,820.96	8,629.98	46.93	42.93	-0.32	2,194.89	-107.53	1,824.80	1,782.84	41.96	43.487		
12,900.00	10,454.44	10,920.96	8,629.98	48.55	44.59	-0.32	2,294.89	-107.53	1,824.49	1,781.28	43.21	42.225		
13,000.00	10,454.12	11,020.96	8,629.98	50.18	46.26	-0.32	2,394.89	-107.53	1,824.17	1,779.71	44.47	41.022		
13,100.00	10,453.81	11,120.96	8,629.98	51.83	47.94	-0.32	2,494.89	-107.53	1,823.86	1,778.12	45.74	39.875		
13,200.00	10,453.50	11,220.96	8,629.98	53.49	49.63	-0.32	2,594.89	-107.53	1,823.54	1,776.52	47.02	38.780		
13,300.00	10,453.18	11,320.96	8,629.98	55.15	51.33	-0.32	2,694.88	-107.53	1,823.23	1,774.91	48.32	37.736		
13,400.00	10,452.87	11,420.95	8,629.98	56.83	53.04	-0.32	2,794.88	-107.53	1,822.92	1,773.30	49.62	36.739		
13,500.00	10,452.56	11,520.95	8,629.98	58.52	54.76	-0.32	2,894.88	-107.53	1,822.60	1,771.67	50.93	35.786		
13,600.00	10,452.24	11,620.95	8,629.99	60.22	56.48	-0.32	2,994.88	-107.53	1,822.29	1,770.04	52.25	34.877		
13,700.00	10,451.93	11,720.95	8,629.99	61.92	58.22	-0.32	3,094.88	-107.53	1,821.97	1,768.40	53.58	34.007		
13,800.00	10,451.62	11,820.95	8,629.99	63.63	59.95	-0.32	3,194.88	-107.53	1,821.66	1,766.75	54.91	33.175		
13,900.00	10,451.30	11,920.95	8,629.99	65.34	61.69	-0.32	3,294.88	-107.53	1,821.34	1,765.09	56.25	32.379		
14,000.00	10,450.99	12,020.95	8,629.99	67.07	63.44	-0.32	3,394.88	-107.53	1,821.03	1,763.43	57.60	31.616		
14,100.00	10,450.68	12,120.95	8,629.99	68.79	65.19	-0.32	3,494.88	-107.53	1,820.71	1,761.76	58.95	30.886		
14,200.00	10,450.36	12,220.95	8,629.99	70.52	66.95	-0.32	3,594.88	-107.53	1,820.40	1,760.09	60.31	30.185		
14,300.00	10,450.05	12,320.95	8,629.99	72.26	68.70	-0.32	3,694.88	-107.53	1,820.08	1,758.41	61.67	29.513		
14,400.00	10,449.74	12,420.95	8,629.99	74.00	70.47	-0.32	3,794.88	-107.53	1,819.77	1,756.73	63.04	28.868		
14,500.00	10,449.42	12,520.95	8,630.00	75.75	72.23	-0.32	3,894.88	-107.53	1,819.46	1,755.05	64.41	28.249		
14,600.00	10,449.11	12,620.95	8,630.00	77.50	74.00	-0.32	3,994.88	-107.53	1,819.14	1,753.36	65.78	27.653		
14,700.00	10,448.79	12,720.95	8,630.00	79.25	75.77	-0.32	4,094.88	-107.53	1,818.83	1,751.66	67.16	27.081		
14,800.00	10,448.48	12,820.95	8,630.00	81.01	77.54	-0.32	4,194.88	-107.53	1,818.51	1,749.97	68.55	26.530		
14,900.00	10,448.17	12,920.95	8,630.00	82.77	79.32	-0.32	4,294.88	-107.53	1,818.20	1,748.26	69.93	26.000		
14,953.26	10,448.00	12,974.21	8,630.00	83.70	80.27	-0.32	4,348.14	-107.53	1,818.03	1,747.36	70.67	25.725		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 328H (SIMOPS) - 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	
0.00	0.00	0.00	0.00	0.00	0.00	-65.01	84.06	-180.35	198.97				
100.00	100.00	100.00	100.00	0.08	0.08	-65.01	84.06	-180.35	198.97	198.82	0.16	1,264.640	
200.00	200.00	200.00	200.00	0.30	0.30	-65.01	84.06	-180.35	198.97	198.37	0.61	327.870	
300.00	300.00	300.00	300.00	0.53	0.53	-65.01	84.06	-180.35	198.97	197.92	1.06	188.351	
400.00	400.00	400.00	400.00	0.75	0.75	-65.01	84.06	-180.35	198.97	197.47	1.51	132.127	
500.00	500.00	500.00	500.00	0.98	0.98	-65.01	84.06	-180.35	198.97	197.02	1.96	101.753	
600.00	600.00	600.00	600.00	1.20	1.20	-65.01	84.06	-180.35	198.97	196.57	2.40	82.734	
700.00	700.00	700.00	700.00	1.43	1.43	-65.01	84.06	-180.35	198.97	196.12	2.85	69.705	
800.00	800.00	800.00	800.00	1.65	1.65	-65.01	84.06	-180.35	198.97	195.67	3.30	60.221	
900.00	900.00	900.00	900.00	1.88	1.88	-65.01	84.06	-180.35	198.97	195.22	3.75	53.009	
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-65.01	84.06	-180.35	198.97	194.77	4.20	47.340	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-65.01	84.06	-180.35	198.97	194.32	4.65	42.766	
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-65.01	84.06	-180.35	198.97	193.87	5.10	38.998	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-65.01	84.06	-180.35	198.97	193.42	5.55	35.840	
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-65.01	84.06	-180.35	198.97	192.97	6.00	33.155	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-65.01	84.06	-180.35	198.97	192.52	6.45	30.845	
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-65.01	84.06	-180.35	198.97	192.07	6.90	28.835	
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-65.01	84.06	-180.35	198.97	191.62	7.35	27.072	
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-65.01	84.06	-180.35	198.97	191.17	7.80	25.512	
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-65.01	84.06	-180.35	198.97	190.73	8.25	24.121	
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-65.01	84.06	-180.35	198.97	190.28	8.70	22.875	
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-65.01	84.06	-180.35	198.97	189.83	9.15	21.751	
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-65.01	84.06	-180.35	198.97	189.38	9.60	20.732	
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-65.01	84.06	-180.35	198.97	188.93	10.05	19.804	
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-65.01	84.06	-180.35	198.97	188.48	10.50	18.956	
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-65.01	84.06	-180.35	198.97	188.03	10.95	18.178	
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-65.01	84.06	-180.35	198.97	187.58	11.40	17.461	
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-65.01	84.06	-180.35	198.97	187.13	11.85	16.798	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-65.01	84.06	-180.35	198.97	186.68	12.29	16.184	
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-65.01	84.06	-180.35	198.97	186.23	12.74	15.613	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-65.01	84.06	-180.35	198.97	185.78	13.19	15.081	
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-65.01	84.06	-180.35	198.97	185.33	13.64	14.584	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-65.01	84.06	-180.35	198.97	184.88	14.09	14.119	
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-65.01	84.06	-180.35	198.97	184.43	14.54	13.682	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-65.01	84.06	-180.35	198.97	183.98	14.99	13.272	
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-65.01	84.06	-180.35	198.97	183.53	15.44	12.886	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-65.01	84.06	-180.35	198.97	183.08	15.89	12.521	
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-65.01	84.06	-180.35	198.97	182.63	16.34	12.177	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-65.01	84.06	-180.35	198.97	182.18	16.79	11.851	
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-65.01	84.06	-180.35	198.97	181.73	17.24	11.542	
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-65.01	84.06	-180.35	198.97	181.28	17.69	11.248	
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-65.01	84.06	-180.35	198.97	180.84	18.14	10.970	
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-65.01	84.06	-180.35	198.97	180.39	18.59	10.704	
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-65.01	84.06	-180.35	198.97	179.94	19.04	10.452	
4,400.00	4,400.00	4,403.56	4,403.55	9.71	9.73	100.68	83.76	-179.46	198.24	178.79	19.45	10.195	
4,500.00	4,499.96	4,507.02	4,506.98	9.88	9.93	101.58	82.88	-176.80	196.05	176.25	19.81	9.898	
4,600.00	4,599.86	4,610.30	4,610.15	10.06	10.13	103.12	81.41	-172.37	192.52	172.35	20.17	9.544	
4,700.00	4,699.68	4,713.30	4,712.95	10.23	10.33	105.36	79.37	-166.20	187.80	167.26	20.54	9.143	
4,800.00	4,799.37	4,815.94	4,815.24	10.40	10.53	108.38	76.75	-158.31	182.15	161.24	20.91	8.711	
4,900.00	4,898.99	4,918.20	4,917.01	10.58	10.74	111.95	73.57	-148.72	175.60	154.31	21.29	8.248	
5,000.00	4,998.62	5,020.09	5,018.20	10.77	10.96	115.99	69.83	-137.45	168.09	146.42	21.67	7.756	
5,100.00	5,098.24	5,121.55	5,118.74	10.95	11.18	120.66	65.55	-124.54	159.89	137.82	22.06	7.247	

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 328H (SIMOPS) - 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		
5,200.00	5,197.87	5,222.51	5,218.53	11.15	11.41	126.13	60.73	-110.01	151.31	128.85	22.46	6.736		
5,300.00	5,297.49	5,322.92	5,317.49	11.34	11.65	132.58	55.39	-93.91	142.86	119.98	22.87	6.246		
5,400.00	5,397.12	5,422.71	5,415.54	11.54	11.90	140.20	49.54	-76.28	135.17	111.87	23.30	5.802		
5,500.00	5,496.74	5,521.09	5,511.92	11.74	12.17	148.94	43.34	-57.57	129.29	105.55	23.74	5.445		
5,600.00	5,596.37	5,618.78	5,607.60	11.95	12.44	158.23	37.13	-38.87	126.68	102.47	24.21	5.233		
5,623.31	5,619.59	5,641.54	5,629.90	12.00	12.50	160.44	35.69	-34.51	126.58	102.26	24.32	5.205 CC, ES		
5,700.00	5,696.00	5,716.47	5,703.28	12.15	12.72	167.64	30.93	-20.16	127.64	102.94	24.69	5.169 SF		
5,800.00	5,795.62	5,814.16	5,798.96	12.37	13.00	176.68	24.72	-1.45	132.09	106.91	25.18	5.246		
5,900.00	5,895.25	5,911.85	5,894.65	12.58	13.30	-175.04	18.52	17.26	139.71	114.04	25.67	5.443		
6,000.00	5,994.87	6,009.54	5,990.33	12.79	13.60	-167.72	12.31	35.97	150.00	123.85	26.15	5.735		
6,100.00	6,094.50	6,107.23	6,086.01	13.01	13.91	-161.39	6.10	54.68	162.47	135.84	26.63	6.101		
6,200.00	6,194.12	6,204.92	6,181.69	13.23	14.22	-156.00	-0.10	73.39	176.65	149.55	27.11	6.517		
6,300.00	6,293.75	6,302.61	6,277.37	13.45	14.54	-151.43	-6.31	92.09	192.17	164.59	27.58	6.968		
6,400.00	6,393.37	6,400.30	6,373.05	13.68	14.87	-147.55	-12.51	110.80	208.72	180.67	28.05	7.441		
6,500.00	6,493.00	6,497.99	6,468.73	13.90	15.20	-144.24	-18.72	129.51	226.08	197.56	28.52	7.927		
6,600.00	6,592.62	6,595.68	6,564.41	14.13	15.54	-141.40	-24.92	148.22	244.08	215.09	28.99	8.419		
6,700.00	6,692.25	6,693.37	6,660.10	14.36	15.88	-138.95	-31.13	166.93	262.59	233.12	29.47	8.912		
6,800.00	6,791.88	6,791.06	6,755.78	14.59	16.22	-136.83	-37.33	185.64	281.50	251.55	29.94	9.401		
6,900.00	6,891.50	6,888.75	6,851.46	14.83	16.57	-134.97	-43.54	204.35	300.73	270.31	30.42	9.886		
7,000.00	6,991.13	6,986.44	6,947.14	15.06	16.92	-133.34	-49.74	223.06	320.24	289.34	30.90	10.364		
7,100.00	7,090.75	7,084.13	7,042.82	15.30	17.27	-131.89	-55.95	241.76	339.98	308.59	31.38	10.833		
7,200.00	7,190.38	7,181.82	7,138.50	15.53	17.63	-130.60	-62.16	260.47	359.89	328.02	31.87	11.293		
7,300.00	7,290.00	7,279.51	7,234.18	15.77	17.99	-129.45	-68.36	279.18	379.97	347.61	32.36	11.743		
7,400.00	7,389.63	7,377.20	7,329.86	16.01	18.36	-128.41	-74.57	297.89	400.18	367.33	32.85	12.182		
7,500.00	7,489.25	7,474.89	7,425.55	16.25	18.72	-127.47	-80.77	316.60	420.51	387.16	33.34	12.612		
7,600.00	7,588.88	7,572.58	7,521.23	16.49	19.09	-126.62	-86.98	335.31	440.93	407.09	33.84	13.031		
7,700.00	7,688.50	7,670.28	7,616.91	16.74	19.47	-125.84	-93.18	354.02	461.44	427.10	34.34	13.439		
7,800.00	7,788.13	7,767.97	7,712.59	16.98	19.84	-125.13	-99.39	372.72	482.02	447.19	34.84	13.837		
7,900.00	7,887.76	7,865.66	7,808.27	17.22	20.22	-124.48	-105.59	391.43	502.67	467.33	35.34	14.225		
8,000.00	7,987.38	7,963.35	7,903.95	17.47	20.59	-123.88	-111.80	410.14	523.38	487.54	35.84	14.603		
8,100.00	8,087.01	8,061.04	7,999.63	17.72	20.97	-123.32	-118.01	428.85	544.14	507.79	36.35	14.971		
8,200.00	8,186.63	8,143.08	8,080.06	17.96	21.27	-123.09	-121.14	444.58	565.83	529.03	36.80	15.375		
8,300.00	8,286.26	8,215.16	8,150.50	18.21	21.50	-123.74	-115.07	458.36	591.40	554.18	37.22	15.889		
8,400.00	8,385.88	8,283.20	8,215.81	18.46	21.69	-125.07	-101.12	471.14	621.30	583.68	37.62	16.517		
8,500.00	8,485.51	8,350.00	8,277.92	18.71	21.86	-126.95	-79.84	483.29	655.97	617.98	37.99	17.265		
8,600.00	8,585.15	8,400.00	8,322.58	18.96	21.97	-128.79	-59.17	492.04	695.64	657.31	38.33	18.147		
8,700.00	8,684.87	8,450.00	8,365.30	19.19	22.07	-130.86	-34.61	500.41	740.24	701.58	38.66	19.149		
8,800.00	8,784.65	8,500.00	8,405.77	19.41	22.16	-133.10	-6.36	508.33	789.72	750.75	38.97	20.266		
8,900.00	8,884.48	8,550.00	8,443.66	19.64	22.24	-135.44	25.39	515.76	844.07	804.81	39.26	21.498		
9,000.00	8,984.35	8,574.11	8,460.92	19.86	22.28	-136.73	41.87	519.14	902.51	863.00	39.52	22.837		
9,100.00	9,084.27	8,600.00	8,478.69	20.08	22.32	-138.12	60.38	522.63	965.15	925.37	39.78	24.262		
9,200.00	9,184.22	8,634.31	8,500.93	20.29	22.37	-139.88	86.12	526.99	1,031.29	991.26	40.03	25.763		
9,300.00	9,284.19	8,650.00	8,510.59	20.50	22.40	-140.86	98.34	528.89	1,100.74	1,060.46	40.28	27.330		
9,400.00	9,384.18	8,682.78	8,529.69	20.70	22.45	-142.57	124.71	532.64	1,172.77	1,132.28	40.50	28.960		
9,500.00	9,484.18	8,700.00	8,539.12	20.90	22.48	-143.63	139.00	534.49	1,247.36	1,206.61	40.75	30.610		
9,600.00	9,584.18	8,722.44	8,550.78	21.10	22.51	50.00	158.04	536.78	1,324.20	1,283.19	41.01	32.286		
9,700.00	9,684.18	8,750.00	8,564.07	21.30	22.56	48.87	182.03	539.39	1,403.45	1,362.28	41.17	34.089		
9,800.00	9,784.18	8,750.00	8,564.07	21.50	22.56	48.87	182.03	539.39	1,484.48	1,443.11	41.38	35.877		
9,900.00	9,884.18	8,768.69	8,572.44	21.70	22.59	48.10	198.66	541.03	1,567.35	1,525.75	41.59	37.682		
10,000.00	9,983.73	8,800.00	8,585.25	21.87	22.65	38.07	227.12	543.55	1,648.85	1,606.88	41.96	39.292		
10,100.00	10,080.37	8,800.00	8,585.25	21.96	22.65	31.72	227.12	543.55	1,723.10	1,681.69	41.40	41.616		
10,200.00	10,171.17	8,821.02	8,592.98	21.99	22.70	27.12	246.60	545.07	1,789.32	1,749.47	39.86	44.893		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 328H (SIMOPS) - 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		
10,300.00	10,253.37	8,850.00	8,802.48	21.98	22.76	23.95	273.91	546.95	1,845.96	1,808.45	37.51	49.213		
10,400.00	10,324.46	8,850.00	8,802.48	21.97	22.76	21.93	273.91	546.95	1,892.04	1,857.36	34.68	54.555		
10,500.00	10,382.30	8,900.00	8,815.65	21.99	22.89	20.47	322.06	549.55	1,926.24	1,894.50	31.74	60.689		
10,600.00	10,425.12	8,900.00	8,815.65	22.09	22.89	19.68	322.06	549.55	1,948.61	1,919.47	29.15	66.853		
10,700.00	10,451.62	8,950.00	8,824.64	22.31	23.04	19.36	371.20	551.33	1,958.27	1,930.66	27.61	70.917		
10,800.00	10,460.99	8,950.00	8,824.64	22.64	23.04	19.45	371.20	551.33	1,955.56	1,928.18	27.38	71.426		
10,900.00	10,460.71	9,000.00	8,829.41	23.11	23.22	19.54	420.94	552.29	1,947.24	1,919.38	27.86	69.896		
11,000.00	10,460.40	9,016.13	8,830.03	23.70	23.28	19.55	437.06	552.42	1,942.77	1,914.55	28.21	68.857		
11,100.00	10,460.08	9,069.16	8,830.11	24.42	23.52	19.55	490.09	552.46	1,941.96	1,913.17	28.78	67.470		
11,200.00	10,459.77	9,169.16	8,829.85	25.25	24.08	19.55	590.09	552.46	1,941.91	1,912.27	29.64	65.524		
11,300.00	10,459.46	9,269.16	8,829.59	26.18	24.79	19.55	690.08	552.46	1,941.85	1,911.28	30.58	63.511		
11,400.00	10,459.14	9,369.16	8,829.33	27.20	25.63	19.55	790.08	552.46	1,941.80	1,910.21	31.59	61.462		
11,500.00	10,458.83	9,469.16	8,829.07	28.30	26.59	19.55	890.08	552.46	1,941.75	1,909.07	32.68	59.408		
11,600.00	10,458.51	9,569.16	8,828.80	29.47	27.64	19.55	990.08	552.46	1,941.70	1,907.86	33.84	57.377		
11,700.00	10,458.20	9,669.16	8,828.54	30.71	28.77	19.55	1,090.08	552.46	1,941.65	1,906.60	35.06	55.387		
11,800.00	10,457.89	9,769.16	8,828.28	32.00	29.98	19.55	1,190.08	552.46	1,941.60	1,905.28	36.32	53.452		
11,900.00	10,457.57	9,869.16	8,828.02	33.35	31.25	19.56	1,290.08	552.46	1,941.55	1,903.91	37.64	51.582		
12,000.00	10,457.26	9,969.16	8,827.76	34.74	32.58	19.56	1,390.08	552.46	1,941.50	1,902.50	39.00	49.784		
12,100.00	10,456.95	10,069.16	8,827.50	36.16	33.95	19.56	1,490.08	552.46	1,941.45	1,901.05	40.39	48.062		
12,200.00	10,456.63	10,169.16	8,827.23	37.62	35.36	19.56	1,590.08	552.46	1,941.40	1,899.57	41.83	46.416		
12,300.00	10,456.32	10,269.16	8,826.97	39.12	36.81	19.56	1,690.08	552.46	1,941.35	1,898.06	43.29	44.847		
12,400.00	10,456.01	10,369.16	8,826.71	40.63	38.30	19.56	1,790.08	552.46	1,941.30	1,896.52	44.78	43.353		
12,500.00	10,455.69	10,469.16	8,826.45	42.18	39.81	19.56	1,890.08	552.46	1,941.25	1,894.95	46.30	41.932		
12,600.00	10,455.38	10,569.16	8,826.19	43.74	41.35	19.56	1,990.08	552.46	1,941.20	1,893.36	47.83	40.582		
12,700.00	10,455.07	10,669.16	8,825.92	45.33	42.91	19.56	2,090.08	552.46	1,941.15	1,891.75	49.39	39.299		
12,800.00	10,454.75	10,769.16	8,825.66	46.93	44.49	19.56	2,190.08	552.46	1,941.09	1,890.12	50.97	38.080		
12,900.00	10,454.44	10,869.16	8,825.40	48.55	46.09	19.56	2,290.08	552.46	1,941.04	1,888.47	52.57	36.923		
13,000.00	10,454.12	10,969.16	8,825.14	50.18	47.70	19.56	2,390.08	552.46	1,940.99	1,886.81	54.18	35.823		
13,100.00	10,453.81	11,069.16	8,824.88	51.83	49.33	19.56	2,490.08	552.46	1,940.94	1,885.13	55.81	34.778		
13,200.00	10,453.50	11,169.16	8,824.62	53.49	50.98	19.56	2,590.08	552.46	1,940.89	1,883.44	57.45	33.785		
13,300.00	10,453.18	11,269.16	8,824.35	55.15	52.63	19.56	2,690.08	552.46	1,940.84	1,881.74	59.10	32.839		
13,400.00	10,452.87	11,369.16	8,824.09	56.83	54.30	19.56	2,790.08	552.46	1,940.79	1,880.03	60.76	31.939		
13,500.00	10,452.56	11,469.16	8,823.83	58.52	55.97	19.56	2,890.08	552.46	1,940.74	1,878.30	62.44	31.083		
13,600.00	10,452.24	11,569.16	8,823.57	60.22	57.66	19.56	2,990.08	552.46	1,940.69	1,876.57	64.12	30.266		
13,700.00	10,451.93	11,669.16	8,823.31	61.92	59.35	19.56	3,090.08	552.46	1,940.64	1,874.83	65.81	29.487		
13,800.00	10,451.62	11,769.16	8,823.05	63.63	61.05	19.56	3,190.08	552.46	1,940.59	1,873.07	67.51	28.744		
13,900.00	10,451.30	11,869.16	8,822.78	65.34	62.76	19.56	3,290.08	552.46	1,940.54	1,871.32	69.22	28.034		
14,000.00	10,450.99	11,969.16	8,822.52	67.07	64.48	19.56	3,390.08	552.46	1,940.49	1,869.55	70.94	27.356		
14,100.00	10,450.68	12,069.16	8,822.26	68.79	66.20	19.56	3,490.08	552.46	1,940.44	1,867.78	72.66	26.707		
14,200.00	10,450.36	12,169.16	8,822.00	70.52	67.93	19.56	3,590.07	552.46	1,940.38	1,866.00	74.38	26.086		
14,300.00	10,450.05	12,269.16	8,821.74	72.26	69.66	19.56	3,690.07	552.46	1,940.33	1,864.22	76.12	25.492		
14,400.00	10,449.74	12,369.16	8,821.47	74.00	71.39	19.56	3,790.07	552.46	1,940.28	1,862.43	77.85	24.922		
14,500.00	10,449.42	12,469.16	8,821.21	75.75	73.13	19.56	3,890.07	552.46	1,940.23	1,860.64	79.60	24.376		
14,600.00	10,449.11	12,569.16	8,820.95	77.50	74.88	19.56	3,990.07	552.46	1,940.18	1,858.84	81.34	23.852		
14,700.00	10,448.79	12,669.16	8,820.69	79.25	76.63	19.57	4,090.07	552.46	1,940.13	1,857.04	83.10	23.348		
14,800.00	10,448.48	12,769.16	8,820.43	81.01	78.38	19.57	4,190.07	552.46	1,940.08	1,855.23	84.85	22.864		
14,900.00	10,448.17	12,869.16	8,820.17	82.77	80.14	19.57	4,290.07	552.46	1,940.03	1,853.42	86.61	22.399		
14,953.26	10,448.00	12,922.42	8,820.03	83.70	81.07	19.57	4,343.33	552.46	1,940.00	1,852.45	87.55	22.159		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 332H (SIMOPS) - 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)	Offset Wellbore Centre +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	-95.06	-15.94	-180.06	180.76					
100.00	100.00	100.00	100.00	0.08	0.08	-95.06	-15.94	-180.06	180.76	180.61	0.16	1,148.904		
200.00	200.00	200.00	200.00	0.30	0.30	-95.06	-15.94	-180.06	180.76	180.16	0.61	297.864		
300.00	300.00	300.00	300.00	0.53	0.53	-95.06	-15.94	-180.06	180.76	179.71	1.06	171.114		
400.00	400.00	400.00	400.00	0.75	0.75	-95.06	-15.94	-180.06	180.76	179.26	1.51	120.035		
500.00	500.00	500.00	500.00	0.98	0.98	-95.06	-15.94	-180.06	180.76	178.81	1.96	92.441		
600.00	600.00	600.00	600.00	1.20	1.20	-95.06	-15.94	-180.06	180.76	178.36	2.40	75.162		
700.00	700.00	700.00	700.00	1.43	1.43	-95.06	-15.94	-180.06	180.76	177.91	2.85	63.325		
800.00	800.00	800.00	800.00	1.65	1.65	-95.06	-15.94	-180.06	180.76	177.46	3.30	54.710		
900.00	900.00	900.00	900.00	1.88	1.88	-95.06	-15.94	-180.06	180.76	177.01	3.75	48.158		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-95.06	-15.94	-180.06	180.76	176.56	4.20	43.007		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-95.06	-15.94	-180.06	180.76	176.11	4.65	38.852		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-95.06	-15.94	-180.06	180.76	175.66	5.10	35.429		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-95.06	-15.94	-180.06	180.76	175.21	5.55	32.560		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-95.06	-15.94	-180.06	180.76	174.76	6.00	30.121		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-95.06	-15.94	-180.06	180.76	174.31	6.45	28.022		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-95.06	-15.94	-180.06	180.76	173.86	6.90	26.197		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-95.06	-15.94	-180.06	180.76	173.41	7.35	24.594		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-95.06	-15.94	-180.06	180.76	172.97	7.80	23.177		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-95.06	-15.94	-180.06	180.76	172.52	8.25	21.914		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-95.06	-15.94	-180.06	180.76	172.07	8.70	20.781		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-95.06	-15.94	-180.06	180.76	171.62	9.15	19.760		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-95.06	-15.94	-180.06	180.76	171.17	9.60	18.835		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-95.06	-15.94	-180.06	180.76	170.72	10.05	17.992		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-95.06	-15.94	-180.06	180.76	170.27	10.50	17.221		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-95.06	-15.94	-180.06	180.76	169.82	10.95	16.514		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-95.06	-15.94	-180.06	180.76	169.37	11.40	15.863		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-95.06	-15.94	-180.06	180.76	168.92	11.85	15.261		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-95.06	-15.94	-180.06	180.76	168.47	12.29	14.703		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-95.06	-15.94	-180.06	180.76	168.02	12.74	14.184		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-95.06	-15.94	-180.06	180.76	167.57	13.19	13.701		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-95.06	-15.94	-180.06	180.76	167.12	13.64	13.249		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-95.06	-15.94	-180.06	180.76	166.67	14.09	12.827		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-95.06	-15.94	-180.06	180.76	166.22	14.54	12.430		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-95.06	-15.94	-180.06	180.76	165.77	14.99	12.057		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-95.06	-15.94	-180.06	180.76	165.32	15.44	11.706		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-95.06	-15.94	-180.06	180.76	164.87	15.89	11.375		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-95.06	-15.94	-180.06	180.76	164.42	16.34	11.062		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-95.06	-15.94	-180.06	180.76	163.97	16.79	10.766		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-95.06	-15.94	-180.06	180.76	163.52	17.24	10.485		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-95.06	-15.94	-180.06	180.76	163.08	17.69	10.219		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-95.06	-15.94	-180.06	180.76	162.63	18.14	9.966		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-95.06	-15.94	-180.06	180.76	162.18	18.59	9.725		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-95.06	-15.94	-180.06	180.76	161.73	19.04	9.495 CC		
4,400.00	4,400.00	4,398.02	4,398.02	9.71	9.71	70.39	-16.63	-180.54	181.02	161.59	19.43	9.318 ES		
4,500.00	4,499.96	4,496.04	4,496.01	9.88	9.88	70.53	-18.70	-181.97	181.78	162.01	19.76	9.198		
4,600.00	4,599.86	4,594.05	4,593.92	10.06	10.06	70.77	-22.15	-184.35	183.04	162.94	20.10	9.106		
4,700.00	4,699.68	4,692.05	4,691.74	10.23	10.23	71.09	-26.97	-187.68	184.82	164.38	20.44	9.040		
4,800.00	4,799.37	4,790.03	4,789.43	10.40	10.41	71.51	-33.17	-191.96	187.12	166.33	20.79	8.999		
4,900.00	4,898.99	4,887.98	4,886.94	10.58	10.59	71.75	-40.74	-197.19	190.23	169.08	21.15	8.994		
5,000.00	4,998.62	4,985.86	4,984.22	10.77	10.78	71.81	-49.68	-203.36	194.40	172.88	21.52	9.035		
5,100.00	5,098.24	5,083.61	5,081.17	10.95	10.97	71.09	-59.96	-210.46	199.63	177.74	21.89	9.120		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 332H (SIMOPS) - 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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,200.00	5,197.87	5,181.22	5,177.75	11.15	11.17	70.24	-71.59	-218.49	205.97	183.70	22.27	9.248		
5,300.00	5,297.49	5,280.91	5,276.27	11.34	11.39	69.26	-84.13	-227.15	212.88	190.21	22.67	9.392		
5,400.00	5,397.12	5,380.61	5,374.80	11.54	11.61	68.34	-96.67	-235.81	219.85	196.78	23.07	9.531		
5,500.00	5,496.74	5,480.31	5,473.32	11.74	11.84	67.47	-109.21	-244.47	226.87	203.40	23.47	9.665		
5,600.00	5,596.37	5,580.00	5,571.84	11.95	12.07	66.66	-121.75	-253.13	233.94	210.05	23.89	9.794		
5,700.00	5,696.00	5,679.70	5,670.37	12.15	12.32	65.90	-134.29	-261.79	241.05	216.75	24.31	9.918		
5,800.00	5,795.62	5,779.39	5,768.89	12.37	12.56	65.18	-146.83	-270.45	248.21	223.48	24.73	10.037		
5,900.00	5,895.25	5,879.09	5,867.42	12.58	12.82	64.50	-159.37	-279.11	255.40	230.24	25.16	10.151		
6,000.00	5,994.87	5,978.79	5,965.94	12.79	13.07	63.85	-171.91	-287.77	262.63	237.03	25.59	10.261		
6,100.00	6,094.50	6,078.48	6,064.47	13.01	13.33	63.25	-184.45	-296.43	269.88	243.85	26.03	10.368		
6,200.00	6,194.12	6,178.18	6,162.99	13.23	13.60	62.67	-196.99	-305.09	277.17	250.69	26.47	10.470		
6,300.00	6,293.75	6,277.88	6,261.52	13.45	13.87	62.12	-209.53	-313.75	284.48	257.56	26.92	10.568		
6,400.00	6,393.37	6,377.57	6,360.04	13.68	14.15	61.60	-222.07	-322.41	291.82	264.45	27.37	10.663		
6,500.00	6,493.00	6,477.27	6,458.57	13.90	14.43	61.11	-234.61	-331.07	299.17	271.35	27.82	10.754		
6,600.00	6,592.62	6,576.97	6,557.09	14.13	14.71	60.64	-247.15	-339.73	306.55	278.28	28.27	10.842		
6,700.00	6,692.25	6,676.66	6,655.62	14.36	14.99	60.19	-259.69	-348.39	313.95	285.22	28.73	10.927		
6,800.00	6,791.88	6,776.36	6,754.14	14.59	15.28	59.76	-272.23	-357.05	321.37	292.18	29.19	11.009		
6,900.00	6,891.50	6,876.06	6,852.67	14.83	15.57	59.35	-284.77	-365.71	328.81	299.15	29.66	11.088		
7,000.00	6,991.13	6,975.75	6,951.19	15.06	15.87	58.96	-297.31	-374.37	336.26	306.14	30.12	11.164		
7,100.00	7,090.75	7,075.45	7,049.72	15.30	16.17	58.59	-309.85	-383.03	343.72	313.13	30.59	11.237		
7,200.00	7,190.38	7,175.15	7,148.24	15.53	16.47	58.23	-322.39	-391.70	351.20	320.14	31.06	11.308		
7,300.00	7,290.00	7,274.84	7,246.77	15.77	16.77	57.89	-334.93	-400.36	358.69	327.17	31.53	11.377		
7,400.00	7,389.63	7,374.54	7,345.29	16.01	17.07	57.56	-347.47	-409.02	366.20	334.20	32.00	11.443		
7,500.00	7,489.25	7,474.23	7,443.82	16.25	17.38	57.25	-360.01	-417.68	373.71	341.24	32.48	11.507		
7,600.00	7,588.88	7,573.93	7,542.34	16.49	17.69	56.95	-372.55	-426.34	381.24	348.29	32.95	11.569		
7,700.00	7,688.50	7,673.63	7,640.87	16.74	18.00	56.65	-385.09	-435.00	388.78	355.35	33.43	11.629		
7,800.00	7,788.13	7,773.32	7,739.39	16.98	18.31	56.37	-397.63	-443.66	396.33	362.42	33.91	11.688		
7,900.00	7,887.76	7,873.02	7,837.92	17.22	18.62	56.11	-410.17	-452.32	403.88	369.49	34.39	11.744		
8,000.00	7,987.38	7,972.72	7,936.44	17.47	18.94	55.85	-422.71	-460.98	411.45	376.57	34.87	11.798		
8,100.00	8,087.01	8,072.41	8,034.97	17.72	19.26	55.60	-435.25	-469.64	419.02	383.66	35.36	11.851		
8,200.00	8,186.63	8,172.11	8,133.49	17.96	19.57	55.35	-447.79	-478.30	426.60	390.76	35.84	11.902		
8,300.00	8,286.26	8,271.81	8,232.02	18.21	19.89	55.12	-460.33	-486.96	434.18	397.86	36.33	11.952		
8,400.00	8,385.88	8,371.50	8,330.54	18.46	20.22	54.90	-472.87	-495.62	441.78	404.96	36.81	12.000		
8,500.00	8,485.51	8,471.20	8,429.07	18.71	20.54	54.68	-485.41	-504.28	449.38	412.08	37.30	12.047		
8,600.00	8,585.15	8,573.83	8,530.51	18.96	20.86	54.47	-498.17	-513.09	457.00	419.21	37.79	12.093		
8,700.00	8,684.87	8,680.66	8,636.36	19.19	21.16	54.29	-510.12	-521.34	463.84	425.58	38.26	12.122		
8,800.00	8,784.65	8,787.70	8,742.65	19.41	21.43	54.16	-520.45	-528.48	469.66	430.93	38.73	12.127		
8,900.00	8,884.48	8,894.89	8,849.31	19.64	21.70	54.07	-529.17	-534.50	474.44	435.26	39.19	12.107		
9,000.00	8,984.35	9,002.21	8,956.29	19.86	21.95	54.02	-536.25	-539.39	478.19	438.55	39.64	12.063		
9,100.00	9,084.27	9,109.63	9,063.50	20.08	22.19	54.01	-541.68	-543.14	480.90	440.82	40.08	11.997		
9,200.00	9,184.22	9,217.10	9,170.88	20.29	22.41	54.04	-545.46	-545.75	482.57	442.05	40.52	11.910		
9,300.00	9,284.19	9,324.61	9,278.35	20.50	22.62	54.11	-547.58	-547.21	483.20	442.25	40.95	11.800		
9,400.00	9,384.18	9,430.44	9,384.18	20.70	22.81	54.22	-548.08	-547.56	482.82	441.46	41.36	11.673		
9,500.00	9,484.18	9,530.44	9,484.18	20.90	22.99	54.27	-548.08	-547.56	482.48	440.72	41.76	11.553		
9,600.00	9,584.18	9,640.07	9,593.79	21.10	23.19	-111.03	-547.20	-547.56	482.26	440.08	42.18	11.434		
9,700.00	9,684.18	9,778.48	9,729.73	21.30	23.29	-108.29	-522.98	-547.56	476.19	433.50	42.69	11.154		
9,800.00	9,784.18	9,899.32	9,840.70	21.50	23.24	-102.71	-475.73	-547.56	464.82	421.62	43.20	10.760		
9,900.00	9,884.18	9,997.40	9,921.90	21.70	23.12	-95.93	-420.94	-547.56	454.05	410.39	43.65	10.401		
9,996.82	9,980.58	10,077.60	9,980.58	21.86	22.99	-90.00	-366.36	-547.56	450.06	406.10	43.96	10.238		
10,000.00	9,983.73	10,079.89	9,982.14	21.87	22.99	-89.78	-364.69	-547.56	450.06	406.09	43.97	10.235		
10,100.00	10,080.37	10,156.14	10,030.12	21.96	22.85	-83.63	-305.50	-547.56	454.24	410.10	44.15	10.289		
10,200.00	10,171.17	10,228.01	10,067.77	21.99	22.71	-77.60	-244.33	-547.56	465.06	420.97	44.09	10.548		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 332H (SIMOPS) - 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		
10,300.00	10,253.37	10,300.00	10,097.52	21.98	22.58	-71.74	-178.83	-547.56	480.54	436.85	43.69	10.998		
10,400.00	10,324.46	10,363.13	10,116.68	21.97	22.47	-66.78	-118.71	-547.56	498.83	455.65	42.98	11.802		
10,500.00	10,382.30	10,427.81	10,129.32	21.99	22.36	-62.30	-55.31	-547.56	517.54	475.51	42.03	12.314		
10,600.00	10,425.12	10,491.19	10,134.70	22.09	22.27	-58.55	7.81	-547.56	535.71	494.63	41.08	13.041		
10,700.00	10,451.62	10,578.84	10,134.96	22.31	22.29	-55.32	95.45	-547.56	550.32	509.88	40.44	13.610		
10,800.00	10,460.99	10,678.27	10,134.96	22.64	22.75	-54.08	194.88	-547.55	555.77	515.01	40.76	13.636		
10,900.00	10,460.71	10,778.27	10,134.96	23.11	23.34	-54.11	294.88	-547.55	555.80	513.95	41.66	13.338		
11,000.00	10,460.40	10,878.27	10,134.96	23.70	24.04	-54.13	394.88	-547.55	555.42	512.67	42.75	12.992		
11,100.00	10,460.08	10,978.27	10,134.96	24.42	24.84	-54.16	494.88	-547.55	555.24	511.21	44.03	12.609		
11,200.00	10,459.77	11,078.27	10,134.96	25.25	25.74	-54.19	594.88	-547.55	555.06	509.57	45.49	12.201		
11,300.00	10,459.46	11,178.27	10,134.96	26.18	26.72	-54.21	694.88	-547.55	554.88	507.77	47.11	11.779		
11,400.00	10,459.14	11,278.26	10,134.97	27.20	27.79	-54.24	794.88	-547.55	554.70	505.84	48.87	11.351		
11,500.00	10,458.83	11,378.26	10,134.97	28.30	28.93	-54.27	894.88	-547.55	554.52	503.77	50.76	10.925		
11,600.00	10,458.51	11,478.26	10,134.97	29.47	30.13	-54.29	994.88	-547.55	554.34	501.59	52.76	10.507		
11,700.00	10,458.20	11,578.26	10,134.97	30.71	31.39	-54.32	1,094.88	-547.55	554.16	499.30	54.86	10.101		
11,800.00	10,457.89	11,678.26	10,134.97	32.00	32.71	-54.35	1,194.88	-547.55	553.98	496.93	57.06	9.709		
11,900.00	10,457.57	11,778.26	10,134.97	33.35	34.07	-54.37	1,294.88	-547.55	553.81	494.47	59.34	9.333		
12,000.00	10,457.26	11,878.26	10,134.97	34.74	35.47	-54.40	1,394.88	-547.55	553.63	491.94	61.69	8.974		
12,100.00	10,456.95	11,978.26	10,134.97	36.16	36.91	-54.43	1,494.88	-547.55	553.45	489.34	64.11	8.633		
12,200.00	10,456.63	12,078.26	10,134.97	37.62	38.38	-54.45	1,594.88	-547.54	553.27	486.69	66.58	8.310		
12,300.00	10,456.32	12,178.26	10,134.97	39.12	39.88	-54.48	1,694.88	-547.54	553.09	483.98	69.11	8.003		
12,400.00	10,456.01	12,278.26	10,134.98	40.63	41.41	-54.51	1,794.88	-547.54	552.91	481.23	71.68	7.714		
12,500.00	10,455.69	12,378.26	10,134.98	42.18	42.96	-54.53	1,894.88	-547.54	552.73	478.44	74.30	7.440		
12,600.00	10,455.38	12,478.26	10,134.98	43.74	44.53	-54.56	1,994.88	-547.54	552.55	475.60	76.95	7.181		
12,700.00	10,455.07	12,578.26	10,134.98	45.33	46.12	-54.59	2,094.88	-547.54	552.38	472.74	79.64	6.936		
12,800.00	10,454.75	12,678.26	10,134.98	46.93	47.72	-54.61	2,194.87	-547.54	552.20	469.84	82.36	6.705		
12,900.00	10,454.44	12,778.26	10,134.98	48.55	49.34	-54.64	2,294.87	-547.54	552.02	466.91	85.11	6.486		
13,000.00	10,454.12	12,878.26	10,134.98	50.18	50.98	-54.67	2,394.87	-547.54	551.84	463.96	87.88	6.280		
13,100.00	10,453.81	12,978.26	10,134.98	51.83	52.63	-54.69	2,494.87	-547.54	551.66	460.99	90.68	6.084		
13,200.00	10,453.50	13,078.26	10,134.98	53.49	54.28	-54.72	2,594.87	-547.54	551.49	457.99	93.50	5.899		
13,300.00	10,453.18	13,178.26	10,134.98	55.15	55.95	-54.75	2,694.87	-547.54	551.31	454.97	96.33	5.723		
13,400.00	10,452.87	13,278.26	10,134.99	56.83	57.63	-54.78	2,794.87	-547.54	551.13	451.94	99.19	5.556		
13,500.00	10,452.56	13,378.25	10,134.99	58.52	59.32	-54.80	2,894.87	-547.53	550.95	448.89	102.07	5.398		
13,600.00	10,452.24	13,478.25	10,134.99	60.22	61.02	-54.83	2,994.87	-547.53	550.78	445.82	104.96	5.248		
13,700.00	10,451.93	13,578.25	10,134.99	61.92	62.72	-54.86	3,094.87	-547.53	550.60	442.74	107.86	5.105		
13,800.00	10,451.62	13,678.25	10,134.99	63.63	64.43	-54.88	3,194.87	-547.53	550.42	439.64	110.78	4.969		
13,900.00	10,451.30	13,778.25	10,134.99	65.34	66.14	-54.91	3,294.87	-547.53	550.25	436.53	113.71	4.839		
14,000.00	10,450.99	13,878.25	10,134.99	67.07	67.86	-54.94	3,394.87	-547.53	550.07	433.41	116.66	4.715		
14,100.00	10,450.68	13,978.25	10,134.99	68.79	69.59	-54.96	3,494.87	-547.53	549.89	430.28	119.61	4.597		
14,200.00	10,450.36	14,078.25	10,134.99	70.52	71.32	-54.99	3,594.87	-547.53	549.72	427.14	122.58	4.485		
14,300.00	10,450.05	14,178.25	10,134.99	72.26	73.06	-55.02	3,694.87	-547.53	549.54	423.99	125.55	4.377		
14,400.00	10,449.74	14,278.25	10,134.99	74.00	74.80	-55.05	3,794.87	-547.53	549.36	420.83	128.53	4.274		
14,500.00	10,449.42	14,378.25	10,135.00	75.75	76.55	-55.07	3,894.87	-547.53	549.19	417.66	131.53	4.175		
14,600.00	10,449.11	14,478.25	10,135.00	77.50	78.29	-55.10	3,994.87	-547.53	549.01	414.48	134.53	4.081		
14,700.00	10,448.79	14,578.25	10,135.00	79.25	80.05	-55.13	4,094.87	-547.53	548.84	411.30	137.54	3.990		
14,800.00	10,448.48	14,678.25	10,135.00	81.01	81.80	-55.16	4,194.86	-547.53	548.66	408.11	140.55	3.904		
14,900.00	10,448.17	14,778.25	10,135.00	82.77	83.56	-55.18	4,294.86	-547.52	548.49	404.91	143.58	3.820		
14,951.96	10,448.00	14,829.84	10,135.00	83.68	84.47	-55.20	4,346.46	-547.52	548.39	403.25	145.14	3.778		
14,953.26	10,448.00	14,829.84	10,135.00	83.70	84.47	-55.20	4,346.46	-547.52	548.39	403.23	145.16	3.778 SF		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 333H (SIMOPS) - 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		
0.00	0.00	0.00	0.00	0.00	0.00	-87.12	9.06	-180.13	180.36					
100.00	100.00	100.00	100.00	0.08	0.08	-87.12	9.06	-180.13	180.36	180.20	0.16	1,146.329		
200.00	200.00	200.00	200.00	0.30	0.30	-87.12	9.06	-180.13	180.36	179.75	0.61	297.197		
300.00	300.00	300.00	300.00	0.53	0.53	-87.12	9.06	-180.13	180.36	179.30	1.06	170.730		
400.00	400.00	400.00	400.00	0.75	0.75	-87.12	9.06	-180.13	180.36	178.85	1.51	119.786		
500.00	500.00	500.00	500.00	0.98	0.98	-87.12	9.06	-180.13	180.36	178.40	1.96	92.234		
600.00	600.00	600.00	600.00	1.20	1.20	-87.12	9.06	-180.13	180.36	177.95	2.40	74.994		
700.00	700.00	700.00	700.00	1.43	1.43	-87.12	9.06	-180.13	180.36	177.50	2.85	63.184		
800.00	800.00	800.00	800.00	1.65	1.65	-87.12	9.06	-180.13	180.36	177.06	3.30	54.587		
900.00	900.00	900.00	900.00	1.88	1.88	-87.12	9.06	-180.13	180.36	176.61	3.75	48.050		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-87.12	9.06	-180.13	180.36	176.16	4.20	42.911		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-87.12	9.06	-180.13	180.36	175.71	4.65	38.765		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-87.12	9.06	-180.13	180.36	175.26	5.10	35.349		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-87.12	9.06	-180.13	180.36	174.81	5.55	32.487		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-87.12	9.06	-180.13	180.36	174.36	6.00	30.054		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-87.12	9.06	-180.13	180.36	173.91	6.45	27.959		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-87.12	9.06	-180.13	180.36	173.46	6.90	26.138		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-87.12	9.06	-180.13	180.36	173.01	7.35	24.539		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-87.12	9.06	-180.13	180.36	172.56	7.80	23.125		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-87.12	9.06	-180.13	180.36	172.11	8.25	21.865		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-87.12	9.06	-180.13	180.36	171.66	8.70	20.735		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-87.12	9.06	-180.13	180.36	171.21	9.15	19.716		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-87.12	9.06	-180.13	180.36	170.76	9.60	18.792		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-87.12	9.06	-180.13	180.36	170.31	10.05	17.951		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-87.12	9.06	-180.13	180.36	169.86	10.50	17.183		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-87.12	9.06	-180.13	180.36	169.41	10.95	16.477		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-87.12	9.06	-180.13	180.36	168.96	11.40	15.827		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-87.12	9.06	-180.13	180.36	168.51	11.85	15.226		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-87.12	9.06	-180.13	180.36	168.06	12.29	14.670		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-87.12	9.06	-180.13	180.36	167.62	12.74	14.152		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-87.12	9.06	-180.13	180.36	167.17	13.19	13.670		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-87.12	9.06	-180.13	180.36	166.72	13.64	13.220		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-87.12	9.06	-180.13	180.36	166.27	14.09	12.798		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-87.12	9.06	-180.13	180.36	165.82	14.54	12.402		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-87.12	9.06	-180.13	180.36	165.37	14.99	12.030		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-87.12	9.06	-180.13	180.36	164.92	15.44	11.680		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-87.12	9.06	-180.13	180.36	164.47	15.89	11.350		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-87.12	9.06	-180.13	180.36	164.02	16.34	11.038		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-87.12	9.06	-180.13	180.36	163.57	16.79	10.742		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-87.12	9.06	-180.13	180.36	163.12	17.24	10.462		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-87.12	9.06	-180.13	180.36	162.67	17.69	10.196		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-87.12	9.06	-180.13	180.36	162.22	18.14	9.943		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-87.12	9.06	-180.13	180.36	161.77	18.59	9.703		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-87.12	9.06	-180.13	180.36	161.32	19.04	9.474		
4,400.00	4,400.00	4,402.30	4,402.30	9.71	9.72	78.36	8.39	-179.51	179.54	160.11	19.44	9.237		
4,500.00	4,499.96	4,504.56	4,504.51	9.88	9.90	78.61	6.38	-177.65	177.09	157.31	19.78	8.952		
4,600.00	4,599.86	4,606.72	4,606.58	10.06	10.09	79.06	3.05	-174.54	173.02	152.89	20.13	8.594		
4,700.00	4,699.88	4,708.75	4,708.41	10.23	10.27	79.71	-1.62	-170.21	167.34	146.85	20.49	8.168		
4,800.00	4,799.37	4,810.61	4,809.93	10.40	10.46	80.60	-7.60	-164.65	160.08	139.23	20.85	7.678		
4,900.00	4,898.99	4,912.27	4,911.11	10.58	10.66	81.37	-14.88	-157.88	151.40	130.18	21.22	7.136		
5,000.00	4,998.62	5,013.72	5,011.87	10.77	10.86	81.75	-23.46	-149.91	141.41	119.82	21.59	6.549		
5,100.00	5,098.24	5,114.88	5,112.14	10.95	11.07	81.67	-33.32	-140.75	130.10	108.13	21.98	5.920		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 333H (SIMOPS) - 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 (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,200.00	5,197.87	5,215.71	5,211.82	11.15	11.28	81.00	-44.43	-130.42	117.48	95.11	22.37	5.252		
5,300.00	5,297.49	5,316.13	5,310.82	11.34	11.51	79.51	-56.77	-118.95	103.60	80.83	22.77	4.550		
5,400.00	5,397.12	5,415.54	5,408.55	11.54	11.75	76.87	-70.08	-106.59	88.76	65.58	23.18	3.829		
5,500.00	5,496.74	5,514.31	5,505.62	11.74	11.99	73.08	-83.45	-94.16	74.04	50.43	23.61	3.136		
5,600.00	5,596.37	5,613.08	5,602.69	11.95	12.25	67.47	-96.82	-81.74	59.79	35.73	24.05	2.486		
5,700.00	5,696.00	5,711.85	5,699.75	12.15	12.51	58.52	-110.19	-69.32	46.45	21.92	24.52	1.894		
5,800.00	5,795.62	5,810.62	5,796.82	12.37	12.78	43.22	-123.55	-56.89	35.07	10.06	25.01	1.402	Level 3	
5,900.00	5,895.25	5,909.39	5,893.89	12.58	13.06	17.60	-136.92	-44.47	28.15	2.71	25.43	1.107	Level 2	
5,939.43	5,934.53	5,948.33	5,932.16	12.66	13.17	5.09	-142.19	-39.57	27.46	1.92	25.55	1.075	Level 2, CC, ES, SF	
6,000.00	5,994.87	6,008.15	5,990.96	12.79	13.34	-13.73	-150.29	-32.04	29.05	3.37	25.68	1.131	Level 2	
6,100.00	6,094.50	6,106.92	6,088.02	13.01	13.63	-37.00	-163.66	-19.62	37.23	11.26	25.97	1.434	Level 3	
6,200.00	6,194.12	6,205.69	6,185.09	13.23	13.93	-50.61	-177.03	-7.19	49.16	22.81	26.36	1.865		
6,300.00	6,293.75	6,304.46	6,282.16	13.45	14.23	-58.66	-190.40	5.23	62.75	35.96	26.79	2.342		
6,400.00	6,393.37	6,403.23	6,379.23	13.68	14.53	-63.80	-203.77	17.65	77.13	49.88	27.25	2.830		
6,500.00	6,493.00	6,501.99	6,476.29	13.90	14.85	-67.31	-217.14	30.08	91.92	64.21	27.71	3.317		
6,600.00	6,592.62	6,600.76	6,573.36	14.13	15.16	-69.84	-230.51	42.50	106.95	78.78	28.18	3.796		
6,700.00	6,692.25	6,699.53	6,670.43	14.36	15.48	-71.75	-243.88	54.93	122.14	93.50	28.65	4.264		
6,800.00	6,791.88	6,798.30	6,767.49	14.59	15.80	-73.23	-257.25	67.35	137.43	108.31	29.12	4.720		
6,900.00	6,891.50	6,897.07	6,864.56	14.83	16.13	-74.42	-270.61	79.77	152.80	123.20	29.60	5.163		
7,000.00	6,991.13	6,995.84	6,961.63	15.06	16.46	-75.39	-283.98	92.20	168.21	138.14	30.07	5.593		
7,100.00	7,090.75	7,094.60	7,058.70	15.30	16.80	-76.19	-297.35	104.62	183.67	153.11	30.56	6.011		
7,200.00	7,190.38	7,193.37	7,155.76	15.53	17.13	-76.87	-310.72	117.05	199.16	168.11	31.04	6.416		
7,300.00	7,290.00	7,292.14	7,252.83	15.77	17.48	-77.46	-324.09	129.47	214.66	183.14	31.53	6.809		
7,400.00	7,389.63	7,390.91	7,349.90	16.01	17.82	-77.96	-337.46	141.89	230.19	198.17	32.02	7.189		
7,500.00	7,489.25	7,489.68	7,446.97	16.25	18.16	-78.40	-350.83	154.32	245.73	213.22	32.51	7.558		
7,600.00	7,588.88	7,588.44	7,544.03	16.49	18.51	-78.79	-364.20	166.74	261.29	228.28	33.01	7.916		
7,700.00	7,688.50	7,687.21	7,641.10	16.74	18.86	-79.13	-377.57	179.17	276.86	243.35	33.50	8.263		
7,800.00	7,788.13	7,785.98	7,738.17	16.98	19.22	-79.44	-390.94	191.59	292.43	258.43	34.00	8.600		
7,900.00	7,887.76	7,884.75	7,835.24	17.22	19.57	-79.72	-404.30	204.02	308.01	273.51	34.51	8.926		
8,000.00	7,987.38	7,983.52	7,932.30	17.47	19.93	-79.97	-417.67	216.44	323.60	288.59	35.01	9.243		
8,100.00	8,087.01	8,082.29	8,029.37	17.72	20.28	-80.19	-431.04	228.86	339.19	303.68	35.52	9.551		
8,200.00	8,186.63	8,181.05	8,126.44	17.96	20.65	-80.40	-444.41	241.29	354.79	318.77	36.02	9.849		
8,300.00	8,286.26	8,279.82	8,223.50	18.21	21.01	-80.59	-457.78	253.71	370.39	333.86	36.53	10.138		
8,400.00	8,385.88	8,379.08	8,321.05	18.46	21.37	-80.77	-471.21	266.19	386.00	348.95	37.05	10.419		
8,500.00	8,485.51	8,484.62	8,424.97	18.71	21.70	-81.00	-484.69	278.72	400.65	363.09	37.56	10.666		
8,600.00	8,585.15	8,590.63	8,529.68	18.96	22.01	-81.35	-496.82	289.99	413.68	375.60	38.07	10.865		
8,700.00	8,684.87	8,697.05	8,635.09	19.19	22.31	-81.67	-507.56	299.97	425.16	386.59	38.57	11.024		
8,800.00	8,784.65	8,803.83	8,741.11	19.41	22.59	-81.96	-516.90	308.65	435.10	396.04	39.05	11.141		
8,900.00	8,884.48	8,910.93	8,847.65	19.64	22.86	-82.21	-524.81	316.00	443.47	403.94	39.53	11.219		
9,000.00	8,984.35	9,018.28	8,954.64	19.86	23.12	-82.44	-531.27	322.01	450.27	410.28	39.99	11.258		
9,100.00	9,084.27	9,125.83	9,061.97	20.08	23.35	-82.65	-536.27	326.65	455.50	415.05	40.45	11.261		
9,200.00	9,184.22	9,233.53	9,169.56	20.29	23.57	-82.84	-539.80	329.93	459.14	418.25	40.89	11.227		
9,300.00	9,284.19	9,341.32	9,277.31	20.50	23.78	-83.01	-541.85	331.84	461.20	419.87	41.33	11.159		
9,400.00	9,384.18	9,448.19	9,384.18	20.70	23.97	-83.16	-542.42	332.37	461.68	419.93	41.75	11.058		
9,500.00	9,484.18	9,548.19	9,484.18	20.90	24.14	-83.23	-542.42	332.37	461.61	419.46	42.15	10.952		
9,600.00	9,584.18	9,653.25	9,589.23	21.10	24.32	111.34	-542.16	332.37	461.54	418.98	42.56	10.845		
9,700.00	9,684.18	9,790.92	9,725.03	21.30	24.45	106.93	-521.61	332.37	456.27	413.21	43.06	10.596		
9,800.00	9,784.18	9,912.65	9,838.02	21.50	24.40	103.44	-476.92	332.37	445.24	401.67	43.56	10.220		
9,900.00	9,884.18	10,012.43	9,921.92	21.70	24.28	96.50	-423.15	332.37	434.29	390.27	44.02	9.865		
10,000.00	9,983.73	10,096.65	9,984.60	21.87	24.14	90.13	-367.01	332.37	429.87	385.53	44.34	9.694		
10,002.04	9,985.74	10,098.30	9,985.74	21.87	24.14	90.00	-365.83	332.37	429.87	385.52	44.35	9.693		
10,100.00	10,080.37	10,174.42	10,034.60	21.96	23.99	83.77	-307.52	332.37	433.59	389.07	44.52	9.738		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 333H (SIMOPS) - 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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	10,171.17	10,250.00	10,075.04	21.99	23.83	77.43	-243.74	332.37	443.99	399.52	44.47	9.985	
10,300.00	10,253.37	10,317.53	10,103.81	21.98	23.68	71.77	-182.68	332.38	459.08	414.99	44.08	10.414	
10,400.00	10,324.46	10,385.00	10,125.17	21.97	23.54	66.53	-118.73	332.38	476.86	433.52	43.34	11.004	
10,500.00	10,382.30	10,450.00	10,138.51	21.99	23.42	62.01	-55.15	332.38	495.48	453.14	42.34	11.701	
10,600.00	10,425.12	10,514.94	10,144.57	22.09	23.30	58.19	9.47	332.38	513.41	472.08	41.33	12.422	
10,700.00	10,451.62	10,600.91	10,144.96	22.31	23.20	54.94	95.44	332.38	528.03	487.43	40.59	13.007	
10,800.00	10,460.99	10,700.35	10,144.96	22.64	23.30	53.68	194.87	332.38	533.53	492.68	40.84	13.063	
10,900.00	10,460.71	10,800.35	10,144.96	23.11	23.78	53.70	294.87	332.38	533.35	491.64	41.71	12.787	
11,000.00	10,460.40	10,900.34	10,144.96	23.70	24.44	53.73	394.87	332.39	533.16	490.39	42.77	12.465	
11,100.00	10,460.08	11,000.34	10,144.96	24.42	25.22	53.75	494.87	332.39	532.97	488.95	44.03	12.106	
11,200.00	10,459.77	11,100.34	10,144.96	25.25	26.10	53.78	594.87	332.39	532.79	487.33	45.45	11.721	
11,300.00	10,459.46	11,200.34	10,144.96	26.18	27.06	53.81	694.87	332.39	532.60	485.56	47.04	11.322	
11,400.00	10,459.14	11,300.34	10,144.97	27.20	28.11	53.84	794.87	332.39	532.41	483.64	48.77	10.916	
11,500.00	10,458.83	11,400.34	10,144.97	28.30	29.22	53.86	894.87	332.40	532.22	481.59	50.63	10.511	
11,600.00	10,458.51	11,500.34	10,144.97	29.47	30.41	53.89	994.87	332.40	532.03	479.42	52.61	10.113	
11,700.00	10,458.20	11,600.34	10,144.97	30.71	31.65	53.92	1,094.87	332.40	531.84	477.15	54.69	9.724	
11,800.00	10,457.89	11,700.34	10,144.97	32.00	32.94	53.94	1,194.87	332.40	531.65	474.79	56.86	9.349	
11,900.00	10,457.57	11,800.34	10,144.97	33.35	34.28	53.97	1,294.87	332.40	531.47	472.35	59.12	8.989	
12,000.00	10,457.26	11,900.34	10,144.97	34.74	35.66	54.00	1,394.87	332.41	531.28	469.83	61.45	8.646	
12,100.00	10,456.95	12,000.34	10,144.97	36.16	37.08	54.03	1,494.87	332.41	531.09	467.24	63.85	8.318	
12,200.00	10,456.63	12,100.34	10,144.97	37.62	38.53	54.05	1,594.87	332.41	530.90	464.60	66.30	8.007	
12,300.00	10,456.32	12,200.34	10,144.97	39.12	40.02	54.08	1,694.87	332.41	530.72	461.91	68.81	7.713	
12,400.00	10,456.01	12,300.34	10,144.98	40.63	41.52	54.11	1,794.86	332.41	530.53	459.16	71.36	7.434	
12,500.00	10,455.69	12,400.34	10,144.98	42.18	43.06	54.13	1,894.86	332.42	530.34	456.38	73.96	7.170	
12,600.00	10,455.38	12,500.34	10,144.98	43.74	44.61	54.16	1,994.86	332.42	530.15	453.55	76.60	6.921	
12,700.00	10,455.07	12,600.34	10,144.98	45.33	46.19	54.19	2,094.86	332.42	529.97	450.70	79.27	6.686	
12,800.00	10,454.75	12,700.34	10,144.98	46.93	47.78	54.22	2,194.86	332.42	529.78	447.81	81.97	6.463	
12,900.00	10,454.44	12,800.34	10,144.98	48.55	49.39	54.24	2,294.86	332.42	529.59	444.89	84.71	6.252	
13,000.00	10,454.12	12,900.33	10,144.98	50.18	51.01	54.27	2,394.86	332.43	529.41	441.94	87.46	6.053	
13,100.00	10,453.81	13,000.33	10,144.98	51.83	52.64	54.30	2,494.86	332.43	529.22	438.97	90.25	5.864	
13,200.00	10,453.50	13,100.33	10,144.98	53.49	54.29	54.33	2,594.86	332.43	529.03	435.98	93.05	5.685	
13,300.00	10,453.18	13,200.33	10,144.98	55.15	55.95	54.35	2,694.86	332.43	528.85	432.97	95.88	5.516	
13,400.00	10,452.87	13,300.33	10,144.99	56.83	57.62	54.38	2,794.86	332.43	528.66	429.94	98.72	5.355	
13,500.00	10,452.56	13,400.33	10,144.99	58.52	59.30	54.41	2,894.86	332.44	528.47	426.89	101.58	5.202	
13,600.00	10,452.24	13,500.33	10,144.99	60.22	60.98	54.44	2,994.86	332.44	528.29	423.83	104.46	5.057	
13,700.00	10,451.93	13,600.33	10,144.99	61.92	62.68	54.46	3,094.86	332.44	528.10	420.75	107.35	4.919	
13,800.00	10,451.62	13,700.33	10,144.99	63.63	64.38	54.49	3,194.86	332.44	527.92	417.66	110.26	4.788	
13,900.00	10,451.30	13,800.33	10,144.99	65.34	66.08	54.52	3,294.86	332.44	527.73	414.55	113.18	4.663	
14,000.00	10,450.99	13,900.33	10,144.99	67.07	67.80	54.55	3,394.86	332.45	527.54	411.44	116.11	4.544	
14,100.00	10,450.68	14,000.33	10,144.99	68.79	69.52	54.57	3,494.86	332.45	527.36	408.31	119.05	4.430	
14,200.00	10,450.36	14,100.33	10,144.99	70.52	71.24	54.60	3,594.86	332.45	527.17	405.17	122.00	4.321	
14,300.00	10,450.05	14,200.33	10,144.99	72.26	72.97	54.63	3,694.86	332.45	526.99	402.02	124.96	4.217	
14,400.00	10,449.74	14,300.33	10,144.99	74.00	74.71	54.66	3,794.85	332.45	526.80	398.87	127.94	4.118	
14,500.00	10,449.42	14,400.33	10,145.00	75.75	76.45	54.68	3,894.85	332.46	526.62	395.70	130.92	4.023	
14,600.00	10,449.11	14,500.33	10,145.00	77.50	78.19	54.71	3,994.85	332.46	526.43	392.53	133.91	3.931	
14,700.00	10,448.79	14,600.33	10,145.00	79.25	79.94	54.74	4,094.85	332.46	526.25	389.34	136.91	3.844	
14,800.00	10,448.48	14,700.33	10,145.00	81.01	81.69	54.77	4,194.85	332.46	526.06	386.15	139.91	3.760	
14,900.00	10,448.17	14,800.33	10,145.00	82.77	83.44	54.80	4,294.85	332.46	525.88	382.96	142.92	3.679	
14,953.26	10,448.00	14,853.59	10,145.00	83.70	84.37	54.81	4,348.11	332.46	525.78	381.25	144.53	3.638	

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 451H (SIMOPS) - 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		
0.00	0.00	0.00	0.00	0.00	0.00	179.83	-49.99	0.15	49.99					
100.00	100.00	100.00	100.00	0.08	0.08	179.83	-49.99	0.15	49.99	49.83	0.16	317.728		
200.00	200.00	200.00	200.00	0.30	0.30	179.83	-49.99	0.15	49.99	49.38	0.61	82.374		
300.00	300.00	300.00	300.00	0.53	0.53	179.83	-49.99	0.15	49.99	48.93	1.06	47.321		
400.00	400.00	400.00	400.00	0.75	0.75	179.83	-49.99	0.15	49.99	48.48	1.51	33.196		
500.00	500.00	500.00	500.00	0.98	0.98	179.83	-49.99	0.15	49.99	48.03	1.96	25.564		
600.00	600.00	600.00	600.00	1.20	1.20	179.83	-49.99	0.15	49.99	47.59	2.40	20.786		
700.00	700.00	700.00	700.00	1.43	1.43	179.83	-49.99	0.15	49.99	47.14	2.85	17.513		
800.00	800.00	800.00	800.00	1.65	1.65	179.83	-49.99	0.15	49.99	46.69	3.30	15.130		
900.00	900.00	900.00	900.00	1.88	1.88	179.83	-49.99	0.15	49.99	46.24	3.75	13.318		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.83	-49.99	0.15	49.99	45.79	4.20	11.894		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.83	-49.99	0.15	49.99	45.34	4.65	10.744		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.83	-49.99	0.15	49.99	44.89	5.10	9.798		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.83	-49.99	0.15	49.99	44.44	5.55	9.004		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.83	-49.99	0.15	49.99	43.99	6.00	8.330		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.83	-49.99	0.15	49.99	43.54	6.45	7.749		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.83	-49.99	0.15	49.99	43.09	6.90	7.245		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.83	-49.99	0.15	49.99	42.64	7.35	6.802		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.83	-49.99	0.15	49.99	42.19	7.80	6.410		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.83	-49.99	0.15	49.99	41.74	8.25	6.060		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.83	-49.99	0.15	49.99	41.29	8.70	5.747		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.83	-49.99	0.15	49.99	40.84	9.15	5.465		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.83	-49.99	0.15	49.99	40.39	9.60	5.209		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.83	-49.99	0.15	49.99	39.94	10.05	4.976		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.83	-49.99	0.15	49.99	39.49	10.50	4.763		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.83	-49.99	0.15	49.99	39.04	10.95	4.567		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.83	-49.99	0.15	49.99	38.59	11.40	4.387		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.83	-49.99	0.15	49.99	38.15	11.85	4.220		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.83	-49.99	0.15	49.99	37.70	12.29	4.066		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.83	-49.99	0.15	49.99	37.25	12.74	3.923		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.83	-49.99	0.15	49.99	36.80	13.19	3.789		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.83	-49.99	0.15	49.99	36.35	13.64	3.664		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.83	-49.99	0.15	49.99	35.90	14.09	3.547		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.83	-49.99	0.15	49.99	35.45	14.54	3.438		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.83	-49.99	0.15	49.99	35.00	14.99	3.334		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.83	-49.99	0.15	49.99	34.55	15.44	3.237		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.83	-49.99	0.15	49.99	34.10	15.89	3.146		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.83	-49.99	0.15	49.99	33.65	16.34	3.059		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.83	-49.99	0.15	49.99	33.20	16.79	2.977		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.83	-49.99	0.15	49.99	32.75	17.24	2.900		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.83	-49.99	0.15	49.99	32.30	17.69	2.826		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.83	-49.99	0.15	49.99	31.85	18.14	2.756		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.83	-49.99	0.15	49.99	31.40	18.59	2.689		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.83	-49.99	0.15	49.99	30.95	19.04	2.626		
4,400.00	4,400.00	4,399.88	4,399.88	9.71	9.72	-15.98	-50.29	0.96	49.46	30.02	19.44	2.545		
4,500.00	4,499.96	4,499.28	4,499.24	9.88	9.91	-19.72	-51.19	3.40	48.01	28.22	19.78	2.427		
4,600.00	4,599.86	4,598.72	4,598.59	10.06	10.10	-26.42	-52.68	7.46	46.08	25.94	20.13	2.289		
4,700.00	4,699.88	4,697.92	4,697.60	10.23	10.29	-36.51	-54.77	13.11	44.53	24.05	20.49	2.174		
4,744.95	4,744.50	4,742.41	4,741.97	10.31	10.38	-42.16	-55.89	16.17	44.31	23.66	20.65	2.146 CC, ES		
4,800.00	4,799.37	4,796.79	4,796.17	10.40	10.49	-49.86	-57.43	20.35	44.70	23.85	20.85	2.144 SF		
4,900.00	4,898.99	4,895.33	4,894.26	10.58	10.69	-63.96	-60.68	29.14	48.50	27.26	21.24	2.284		
5,000.00	4,998.82	4,993.56	4,991.86	10.77	10.89	-75.70	-64.49	39.49	56.49	34.87	21.62	2.613		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 451H (SIMOPS) - 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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,098.24	5,091.40	5,088.88	10.95	11.10	-84.27	-88.86	51.35	67.97	45.97	22.00	3.089		
5,200.00	5,197.87	5,188.81	5,185.25	11.15	11.32	-90.15	-73.78	64.71	82.20	59.82	22.38	3.673		
5,300.00	5,297.49	5,286.32	5,281.47	11.34	11.55	-94.12	-79.24	79.51	98.59	75.82	22.77	4.330		
5,400.00	5,397.12	5,384.71	5,378.52	11.54	11.79	-96.95	-84.86	94.77	115.66	92.49	23.17	4.992		
5,500.00	5,496.74	5,483.11	5,475.56	11.74	12.04	-99.05	-90.48	110.02	132.92	109.35	23.57	5.639		
5,600.00	5,596.37	5,581.51	5,572.60	11.95	12.29	-100.67	-96.11	125.28	150.33	126.35	23.98	6.269		
5,700.00	5,696.00	5,679.90	5,669.65	12.15	12.55	-101.95	-101.73	140.53	167.82	143.42	24.39	6.880		
5,800.00	5,795.62	5,778.30	5,766.69	12.37	12.81	-102.98	-107.35	155.79	185.38	160.58	24.81	7.471		
5,900.00	5,895.25	5,876.69	5,863.73	12.58	13.08	-103.84	-112.97	171.04	202.98	177.74	25.24	8.043		
6,000.00	5,994.87	5,975.09	5,960.78	12.79	13.36	-104.56	-118.60	186.30	220.63	194.96	25.67	8.595		
6,100.00	6,094.50	6,073.49	6,057.82	13.01	13.63	-105.18	-124.22	201.55	238.30	212.20	26.10	9.129		
6,200.00	6,194.12	6,171.88	6,154.86	13.23	13.92	-105.71	-129.84	216.81	256.00	229.45	26.54	9.644		
6,300.00	6,293.75	6,270.28	6,251.91	13.45	14.21	-106.17	-135.47	232.07	273.71	246.72	26.99	10.142		
6,400.00	6,393.37	6,368.67	6,348.95	13.68	14.50	-106.57	-141.09	247.32	291.44	264.01	27.44	10.623		
6,500.00	6,493.00	6,467.07	6,445.99	13.90	14.79	-106.93	-146.71	262.58	309.18	281.30	27.89	11.087		
6,600.00	6,592.62	6,565.47	6,543.04	14.13	15.09	-107.25	-152.33	277.83	326.94	298.59	28.34	11.535		
6,700.00	6,692.25	6,663.86	6,640.08	14.36	15.39	-107.54	-157.96	293.09	344.70	315.90	28.80	11.968		
6,800.00	6,791.88	6,762.26	6,737.12	14.59	15.70	-107.80	-163.58	308.34	362.47	333.20	29.26	12.386		
6,900.00	6,891.50	6,860.66	6,834.17	14.83	16.00	-108.03	-169.20	323.60	380.24	350.51	29.73	12.790		
7,000.00	6,991.13	6,959.05	6,931.21	15.06	16.31	-108.25	-174.82	338.86	398.02	367.83	30.20	13.181		
7,100.00	7,090.75	7,057.45	7,028.26	15.30	16.63	-108.44	-180.45	354.11	415.81	385.14	30.67	13.558		
7,200.00	7,190.38	7,155.84	7,125.30	15.53	16.94	-108.62	-186.07	369.37	433.60	402.46	31.14	13.923		
7,300.00	7,290.00	7,254.24	7,222.34	15.77	17.26	-108.79	-191.69	384.62	451.39	419.77	31.62	14.276		
7,400.00	7,389.63	7,352.64	7,319.39	16.01	17.58	-108.94	-197.31	399.88	469.19	437.09	32.10	14.617		
7,500.00	7,489.25	7,451.03	7,416.43	16.25	17.90	-109.08	-202.94	415.13	486.99	454.41	32.58	14.947		
7,600.00	7,588.88	7,549.43	7,513.47	16.49	18.23	-109.21	-208.56	430.39	504.79	471.73	33.06	15.267		
7,700.00	7,688.50	7,647.82	7,610.52	16.74	18.55	-109.33	-214.18	445.64	522.60	489.05	33.55	15.576		
7,800.00	7,788.13	7,744.87	7,706.23	16.98	18.87	-109.47	-219.54	460.69	540.43	506.39	34.03	15.879		
7,900.00	7,887.76	7,833.43	7,793.54	17.22	19.13	-110.51	-225.48	474.42	559.34	524.85	34.49	16.220		
8,000.00	7,987.38	7,916.59	7,874.06	17.47	19.33	-112.66	-199.31	487.07	580.59	545.68	34.90	16.634		
8,100.00	8,087.01	7,991.76	7,944.16	17.72	19.50	-115.45	-174.70	498.09	605.52	570.24	35.29	17.161		
8,200.00	8,186.63	8,057.84	8,002.70	17.96	19.62	-118.45	-145.54	507.30	635.55	599.91	35.63	17.837		
8,300.00	8,286.26	8,114.95	8,050.34	18.21	19.72	-121.36	-114.99	514.79	671.68	635.74	35.95	18.685		
8,400.00	8,385.88	8,163.87	8,088.59	18.46	19.80	-124.04	-85.11	520.80	714.43	678.19	36.24	19.712		
8,500.00	8,485.51	8,200.00	8,115.15	18.71	19.85	-126.09	-60.98	524.97	763.80	727.29	36.52	20.916		
8,600.00	8,585.15	8,250.00	8,149.31	18.96	19.93	-129.19	-24.90	530.35	819.26	782.46	36.80	22.262		
8,700.00	8,684.87	8,272.76	8,163.81	19.19	19.97	-130.79	-7.50	532.62	879.80	842.77	37.03	23.757		
8,800.00	8,784.65	8,300.00	8,180.24	19.41	20.01	-132.67	14.06	535.21	944.96	907.65	37.31	25.329		
8,900.00	8,884.48	8,324.18	8,193.97	19.64	20.05	-134.38	33.85	537.37	1,014.04	976.48	37.57	26.994		
9,000.00	8,984.35	8,350.00	8,207.70	19.86	20.10	-136.18	55.61	539.52	1,086.50	1,048.71	37.79	28.748		
9,100.00	9,084.27	8,350.00	8,207.70	20.08	20.10	-136.58	55.61	539.52	1,162.01	1,123.99	38.02	30.561		
9,200.00	9,184.22	8,382.07	8,223.38	20.29	20.17	-138.70	83.46	541.99	1,239.51	1,201.24	38.26	32.394		
9,300.00	9,284.19	8,400.00	8,231.48	20.50	20.21	-140.06	99.42	543.26	1,319.31	1,280.83	38.48	34.282		
9,400.00	9,384.18	8,400.00	8,231.48	20.70	20.21	-140.51	99.42	543.26	1,401.03	1,362.33	38.70	36.199		
9,500.00	9,484.18	8,425.18	8,242.00	20.90	20.27	-142.22	122.23	544.92	1,483.96	1,445.03	38.93	38.120		
9,600.00	9,584.18	8,450.00	8,251.39	21.10	20.34	51.11	145.15	546.39	1,568.65	1,529.52	39.13	40.087		
9,700.00	9,684.18	8,450.00	8,251.39	21.30	20.34	51.11	145.15	546.39	1,654.45	1,615.12	39.34	42.058		
9,800.00	9,784.18	8,450.00	8,251.39	21.50	20.34	51.11	145.15	546.39	1,741.77	1,702.23	39.54	44.046		
9,900.00	9,884.18	8,450.00	8,251.39	21.70	20.34	51.11	145.15	546.39	1,830.39	1,790.64	39.75	46.046		
10,000.00	9,983.73	8,477.48	8,260.64	21.87	20.41	38.29	170.99	547.85	1,916.78	1,876.84	39.94	47.989		
10,100.00	10,080.37	8,500.00	8,267.29	21.96	20.49	30.19	192.48	548.89	1,997.41	1,958.11	39.30	50.830		
10,200.00	10,171.17	8,500.00	8,267.29	21.99	20.49	25.28	192.48	548.89	2,069.90	2,032.12	37.78	54.793		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 451H (SIMOPS) - 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		
10,300.00	10,253.37	8,524.08	8,273.48	21.98	20.57	21.84	215.72	549.86	2,132.87	2,097.35	35.51	60.058		
10,400.00	10,324.46	8,550.00	8,279.06	21.97	20.68	19.55	241.02	550.74	2,185.15	2,152.36	32.79	66.636		
10,500.00	10,382.30	8,550.00	8,279.06	21.99	20.68	18.11	241.02	550.74	2,225.78	2,195.83	29.95	74.313		
10,600.00	10,425.12	8,600.00	8,286.60	22.09	20.91	17.14	290.42	551.93	2,253.85	2,226.32	27.53	81.861		
10,700.00	10,451.62	8,600.00	8,286.60	22.31	20.91	16.70	290.42	551.93	2,268.71	2,242.79	25.92	87.526		
10,800.00	10,460.99	8,628.24	8,288.97	22.64	21.05	16.65	318.55	552.30	2,270.51	2,244.76	25.75	88.184		
10,900.00	10,460.71	8,650.00	8,289.86	23.11	21.17	16.67	340.29	552.44	2,266.50	2,240.42	26.08	86.913		
11,000.00	10,460.40	8,704.59	8,290.00	23.70	21.51	16.67	394.88	552.46	2,265.61	2,239.04	26.58	85.239		
11,100.00	10,460.08	8,804.58	8,290.00	24.42	22.24	16.67	494.88	552.46	2,265.31	2,237.96	27.35	82.816		
11,200.00	10,459.77	8,904.58	8,290.00	25.25	23.11	16.67	594.88	552.46	2,265.01	2,236.80	28.22	80.276		
11,300.00	10,459.46	9,004.58	8,290.00	26.18	24.10	16.68	694.88	552.46	2,264.71	2,235.55	29.16	77.674		
11,400.00	10,459.14	9,104.58	8,290.00	27.20	25.19	16.68	794.88	552.46	2,264.41	2,234.24	30.17	75.055		
11,500.00	10,458.83	9,204.58	8,290.00	28.30	26.36	16.68	894.87	552.46	2,264.10	2,232.86	31.25	72.455		
11,600.00	10,458.51	9,304.58	8,290.00	29.47	27.60	16.68	994.87	552.46	2,263.80	2,231.42	32.38	69.903		
11,700.00	10,458.20	9,404.58	8,290.00	30.71	28.90	16.69	1,094.87	552.46	2,263.50	2,229.93	33.57	67.419		
11,800.00	10,457.89	9,504.58	8,290.00	32.00	30.26	16.69	1,194.87	552.46	2,263.20	2,228.39	34.81	65.016		
11,900.00	10,457.57	9,604.58	8,290.00	33.35	31.67	16.69	1,294.87	552.46	2,262.90	2,226.81	36.09	62.705		
12,000.00	10,457.26	9,704.58	8,290.00	34.74	33.12	16.69	1,394.87	552.46	2,262.59	2,225.19	37.40	60.491		
12,100.00	10,456.95	9,804.58	8,290.00	36.16	34.60	16.69	1,494.87	552.46	2,262.29	2,223.54	38.75	58.375		
12,200.00	10,456.63	9,904.58	8,290.00	37.62	36.11	16.70	1,594.87	552.46	2,261.99	2,221.86	40.14	56.359		
12,300.00	10,456.32	10,004.58	8,290.00	39.12	37.65	16.70	1,694.87	552.46	2,261.69	2,220.14	41.54	54.440		
12,400.00	10,456.01	10,104.58	8,290.00	40.63	39.22	16.70	1,794.87	552.46	2,261.39	2,218.41	42.98	52.616		
12,500.00	10,455.69	10,204.58	8,290.00	42.18	40.81	16.70	1,894.87	552.46	2,261.08	2,216.65	44.44	50.884		
12,600.00	10,455.38	10,304.58	8,290.00	43.74	42.42	16.70	1,994.87	552.46	2,260.78	2,214.87	45.91	49.240		
12,700.00	10,455.07	10,404.58	8,290.00	45.33	44.04	16.71	2,094.87	552.46	2,260.48	2,213.07	47.41	47.680		
12,800.00	10,454.75	10,504.58	8,290.00	46.93	45.68	16.71	2,194.87	552.46	2,260.18	2,211.26	48.92	46.198		
12,900.00	10,454.44	10,604.58	8,290.00	48.55	47.33	16.71	2,294.87	552.46	2,259.88	2,209.42	50.45	44.792		
13,000.00	10,454.12	10,704.58	8,290.00	50.18	49.00	16.71	2,394.87	552.46	2,259.58	2,207.58	52.00	43.457		
13,100.00	10,453.81	10,804.57	8,290.00	51.83	50.67	16.72	2,494.87	552.46	2,259.27	2,205.72	53.55	42.188		
13,200.00	10,453.50	10,904.57	8,290.00	53.49	52.36	16.72	2,594.87	552.46	2,258.97	2,203.85	55.12	40.982		
13,300.00	10,453.18	11,004.57	8,290.00	55.15	54.06	16.72	2,694.87	552.46	2,258.67	2,201.97	56.70	39.835		
13,400.00	10,452.87	11,104.57	8,290.00	56.83	55.76	16.72	2,794.87	552.46	2,258.37	2,200.08	58.29	38.744		
13,500.00	10,452.56	11,204.57	8,290.00	58.52	57.47	16.72	2,894.86	552.46	2,258.07	2,198.18	59.89	37.704		
13,600.00	10,452.24	11,304.57	8,290.00	60.22	59.19	16.73	2,994.86	552.46	2,257.76	2,196.27	61.50	36.714		
13,700.00	10,451.93	11,404.57	8,290.00	61.92	60.91	16.73	3,094.86	552.46	2,257.46	2,194.35	63.11	35.769		
13,800.00	10,451.62	11,504.57	8,290.00	63.63	62.64	16.73	3,194.86	552.46	2,257.16	2,192.42	64.74	34.868		
13,900.00	10,451.30	11,604.57	8,290.00	65.34	64.38	16.73	3,294.86	552.46	2,256.86	2,190.49	66.37	34.007		
14,000.00	10,450.99	11,704.57	8,290.00	67.07	66.12	16.73	3,394.86	552.46	2,256.56	2,188.55	68.00	33.184		
14,100.00	10,450.68	11,804.57	8,290.00	68.79	67.87	16.74	3,494.86	552.46	2,256.25	2,186.61	69.64	32.397		
14,200.00	10,450.36	11,904.57	8,290.00	70.52	69.61	16.74	3,594.86	552.46	2,255.95	2,184.66	71.29	31.644		
14,300.00	10,450.05	12,004.57	8,290.00	72.26	71.37	16.74	3,694.86	552.46	2,255.65	2,182.70	72.95	30.922		
14,400.00	10,449.74	12,104.57	8,290.00	74.00	73.12	16.74	3,794.86	552.46	2,255.35	2,180.74	74.60	30.231		
14,500.00	10,449.42	12,204.57	8,290.00	75.75	74.88	16.75	3,894.86	552.46	2,255.05	2,178.78	76.27	29.568		
14,600.00	10,449.11	12,304.57	8,290.00	77.50	76.65	16.75	3,994.86	552.46	2,254.74	2,176.81	77.93	28.931		
14,700.00	10,448.79	12,404.57	8,290.00	79.25	78.41	16.75	4,094.86	552.46	2,254.44	2,174.84	79.61	28.320		
14,800.00	10,448.48	12,504.57	8,290.00	81.01	80.18	16.75	4,194.86	552.46	2,254.14	2,172.86	81.28	27.733		
14,900.00	10,448.17	12,604.57	8,290.00	82.77	81.95	16.75	4,294.86	552.46	2,253.84	2,170.88	82.96	27.168		
14,953.26	10,448.00	12,657.83	8,290.00	83.70	82.90	16.76	4,348.12	552.46	2,253.68	2,169.82	83.85	26.876		

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 452H (SIMOPS) - 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)					
0.00	0.00	0.00	0.00	0.00	0.00	-0.18	25.00	-0.08	25.00				
100.00	100.00	100.00	100.00	0.08	0.08	-0.18	25.00	-0.08	25.00	24.84	0.16	158.896	
200.00	200.00	200.00	200.00	0.30	0.30	-0.18	25.00	-0.08	25.00	24.39	0.61	41.195	
300.00	300.00	300.00	300.00	0.53	0.53	-0.18	25.00	-0.08	25.00	23.94	1.06	23.665	
400.00	400.00	400.00	400.00	0.75	0.75	-0.18	25.00	-0.08	25.00	23.49	1.51	16.601	
500.00	500.00	500.00	500.00	0.98	0.98	-0.18	25.00	-0.08	25.00	23.04	1.96	12.785	
600.00	600.00	600.00	600.00	1.20	1.20	-0.18	25.00	-0.08	25.00	22.60	2.40	10.395	
700.00	700.00	700.00	700.00	1.43	1.43	-0.18	25.00	-0.08	25.00	22.15	2.85	8.758	
800.00	800.00	800.00	800.00	1.65	1.65	-0.18	25.00	-0.08	25.00	21.70	3.30	7.566	
900.00	900.00	900.00	900.00	1.88	1.88	-0.18	25.00	-0.08	25.00	21.25	3.75	6.660	
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-0.18	25.00	-0.08	25.00	20.80	4.20	5.948	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-0.18	25.00	-0.08	25.00	20.35	4.65	5.373	
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-0.18	25.00	-0.08	25.00	19.90	5.10	4.900	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-0.18	25.00	-0.08	25.00	19.45	5.55	4.503	
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-0.18	25.00	-0.08	25.00	19.00	6.00	4.166	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-0.18	25.00	-0.08	25.00	18.55	6.45	3.876	
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-0.18	25.00	-0.08	25.00	18.10	6.90	3.623	
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-0.18	25.00	-0.08	25.00	17.65	7.35	3.401	
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-0.18	25.00	-0.08	25.00	17.20	7.80	3.205	
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-0.18	25.00	-0.08	25.00	16.75	8.25	3.031	
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-0.18	25.00	-0.08	25.00	16.30	8.70	2.874	
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-0.18	25.00	-0.08	25.00	15.85	9.15	2.733	
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-0.18	25.00	-0.08	25.00	15.40	9.60	2.605	
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-0.18	25.00	-0.08	25.00	14.95	10.05	2.488	
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-0.18	25.00	-0.08	25.00	14.50	10.50	2.382	
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-0.18	25.00	-0.08	25.00	14.05	10.95	2.284	
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-0.18	25.00	-0.08	25.00	13.60	11.40	2.194	
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-0.18	25.00	-0.08	25.00	13.15	11.85	2.111	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-0.18	25.00	-0.08	25.00	12.71	12.29	2.033	
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-0.18	25.00	-0.08	25.00	12.26	12.74	1.962	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-0.18	25.00	-0.08	25.00	11.81	13.19	1.895	
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-0.18	25.00	-0.08	25.00	11.36	13.64	1.832	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-0.18	25.00	-0.08	25.00	10.91	14.09	1.774	
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-0.18	25.00	-0.08	25.00	10.46	14.54	1.719	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-0.18	25.00	-0.08	25.00	10.01	14.99	1.668	
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-0.18	25.00	-0.08	25.00	9.56	15.44	1.619	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-0.18	25.00	-0.08	25.00	9.11	15.89	1.573	
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-0.18	25.00	-0.08	25.00	8.66	16.34	1.530	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-0.18	25.00	-0.08	25.00	8.21	16.79	1.489 Level 3	
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-0.18	25.00	-0.08	25.00	7.76	17.24	1.450 Level 3	
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-0.18	25.00	-0.08	25.00	7.31	17.69	1.413 Level 3	
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-0.18	25.00	-0.08	25.00	6.86	18.14	1.378 Level 3	
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-0.18	25.00	-0.08	25.00	6.41	18.59	1.345 Level 3	
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-0.18	25.00	-0.08	25.00	5.96	19.04	1.313 Level 3, CC, ES, SF	
4,400.00	4,400.00	4,400.00	4,400.00	9.71	9.74	165.70	25.00	-0.08	25.84	6.39	19.46	1.328 Level 3	
4,500.00	4,499.96	4,499.96	4,499.96	9.88	9.97	167.00	25.00	-0.08	28.39	8.55	19.84	1.431 Level 3	
4,600.00	4,599.86	4,599.86	4,599.86	10.06	10.19	168.72	25.00	-0.08	32.65	12.43	20.22	1.615	
4,700.00	4,699.68	4,699.68	4,699.68	10.23	10.42	170.48	25.00	-0.08	38.66	18.06	20.60	1.877	
4,800.00	4,799.37	4,799.37	4,799.37	10.40	10.64	172.07	25.00	-0.08	46.41	25.44	20.97	2.213	
4,900.00	4,898.99	4,898.99	4,898.99	10.58	10.87	173.31	25.00	-0.08	54.99	33.62	21.37	2.573	
5,000.00	4,998.62	4,998.62	4,998.62	10.77	11.09	174.22	25.00	-0.08	63.59	41.81	21.78	2.920	
5,100.00	5,098.24	5,098.79	5,098.78	10.95	11.29	175.52	24.50	0.61	71.82	49.66	22.16	3.241	

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



LEAM Drilling Systems LLC

Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 452H (SIMOPS) - 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)				
5,200.00	5,197.87	5,199.01	5,198.97	11.15	11.47	177.71	22.97	2.72	79.38	56.85	22.52	3.524		
5,300.00	5,297.49	5,299.23	5,299.09	11.34	11.66	-179.40	20.42	6.25	86.39	63.50	22.89	3.774		
5,400.00	5,397.12	5,399.37	5,399.04	11.54	11.84	-175.94	16.84	11.19	93.05	69.79	23.26	4.000		
5,500.00	5,496.74	5,499.38	5,498.74	11.74	12.03	-171.97	12.25	17.54	99.59	75.95	23.64	4.213		
5,600.00	5,596.37	5,599.19	5,598.10	11.95	12.22	-167.59	6.64	25.28	106.26	82.24	24.03	4.423		
5,700.00	5,696.00	5,698.75	5,697.02	12.15	12.42	-162.88	0.04	34.39	113.33	88.91	24.42	4.641		
5,800.00	5,795.62	5,798.00	5,795.42	12.37	12.63	-157.95	-7.54	44.86	121.09	96.26	24.83	4.877		
5,900.00	5,895.25	5,896.88	5,893.22	12.58	12.84	-152.89	-16.08	56.66	129.79	104.54	25.25	5.141		
6,000.00	5,994.87	5,995.33	5,990.33	12.79	13.06	-147.83	-25.57	69.77	139.69	114.01	25.67	5.441		
6,100.00	6,094.50	6,093.51	6,086.89	13.01	13.29	-142.87	-35.96	84.13	150.97	124.86	26.12	5.781		
6,200.00	6,194.12	6,192.00	6,183.69	13.23	13.53	-138.47	-46.63	98.85	163.38	136.81	26.56	6.150		
6,300.00	6,293.75	6,290.49	6,280.49	13.45	13.78	-134.71	-57.29	113.58	176.61	149.59	27.02	6.537		
6,400.00	6,393.37	6,388.98	6,377.29	13.68	14.03	-131.47	-67.95	128.31	190.49	163.02	27.48	6.933		
6,500.00	6,493.00	6,487.48	6,474.09	13.90	14.30	-128.68	-78.62	143.04	204.90	176.96	27.94	7.334		
6,600.00	6,592.62	6,585.97	6,570.89	14.13	14.56	-126.25	-89.28	157.77	219.72	191.32	28.40	7.736		
6,700.00	6,692.25	6,684.46	6,667.69	14.36	14.84	-124.13	-99.94	172.50	234.88	206.01	28.87	8.136		
6,800.00	6,791.88	6,782.95	6,764.49	14.59	15.12	-122.27	-110.61	187.23	250.32	220.98	29.34	8.531		
6,900.00	6,891.50	6,881.45	6,861.29	14.83	15.41	-120.63	-121.27	201.95	265.98	236.17	29.81	8.921		
7,000.00	6,991.13	6,979.94	6,958.09	15.06	15.70	-119.17	-131.93	216.68	281.84	251.55	30.29	9.304		
7,100.00	7,090.75	7,078.43	7,054.89	15.30	15.99	-117.87	-142.60	231.41	297.86	267.09	30.77	9.680		
7,200.00	7,190.38	7,176.93	7,151.69	15.53	16.29	-116.69	-153.26	246.14	314.01	282.76	31.25	10.048		
7,300.00	7,290.00	7,275.42	7,248.49	15.77	16.60	-115.64	-163.92	260.87	330.28	298.54	31.74	10.407		
7,400.00	7,389.63	7,373.91	7,345.29	16.01	16.91	-114.68	-174.59	275.60	346.65	314.42	32.22	10.757		
7,500.00	7,489.25	7,472.40	7,442.09	16.25	17.22	-113.81	-185.25	290.33	363.10	330.39	32.71	11.099		
7,600.00	7,588.88	7,570.90	7,538.89	16.49	17.54	-113.01	-195.91	305.06	379.63	346.42	33.21	11.433		
7,700.00	7,688.50	7,669.39	7,635.69	16.74	17.86	-112.28	-206.58	319.78	396.22	362.52	33.70	11.757		
7,800.00	7,788.13	7,767.88	7,732.49	16.98	18.18	-111.61	-217.24	334.51	412.88	378.68	34.20	12.074		
7,900.00	7,887.76	7,866.38	7,829.29	17.22	18.51	-110.99	-227.90	349.24	429.58	394.88	34.70	12.381		
8,000.00	7,987.38	7,964.87	7,926.09	17.47	18.84	-110.42	-238.57	363.97	446.33	411.13	35.20	12.681		
8,100.00	8,087.01	8,063.36	8,022.89	17.72	19.18	-109.89	-249.23	378.70	463.12	427.42	35.70	12.973		
8,200.00	8,186.63	8,161.85	8,119.69	17.96	19.51	-109.39	-259.89	393.43	479.94	443.74	36.20	13.256		
8,300.00	8,286.26	8,260.35	8,216.49	18.21	19.85	-108.93	-270.56	408.16	496.80	460.09	36.71	13.533		
8,400.00	8,385.88	8,358.84	8,313.29	18.46	20.19	-108.50	-281.22	422.88	513.69	476.47	37.22	13.801		
8,500.00	8,485.51	8,457.33	8,410.09	18.71	20.53	-108.10	-291.88	437.61	530.60	492.87	37.73	14.063		
8,600.00	8,585.15	8,555.83	8,506.89	18.96	20.88	-107.76	-302.55	452.34	547.46	509.22	38.24	14.317		
8,700.00	8,684.87	8,654.34	8,603.71	19.19	21.23	-107.38	-313.21	467.07	564.09	525.36	38.74	14.562		
8,800.00	8,784.65	8,758.13	8,705.79	19.41	21.56	-106.93	-324.22	482.29	580.23	541.01	39.23	14.792		
8,900.00	8,884.48	8,865.64	8,811.84	19.64	21.87	-106.51	-334.56	496.56	594.82	555.11	39.71	14.981		
9,000.00	8,984.35	8,973.70	8,918.74	19.86	22.18	-106.14	-343.77	509.29	607.72	567.54	40.18	15.125		
9,100.00	9,084.27	9,082.24	9,026.41	20.08	22.47	-105.81	-351.83	520.42	618.91	578.27	40.64	15.228		
9,200.00	9,184.22	9,181.21	9,134.75	20.29	22.75	-105.51	-358.72	529.93	628.39	587.29	41.10	15.290		
9,300.00	9,284.19	9,300.54	9,243.65	20.50	23.01	-105.24	-364.41	537.80	636.13	594.58	41.54	15.312		
9,400.00	9,384.18	9,410.17	9,353.00	20.70	23.26	-105.00	-368.90	543.99	642.12	600.14	41.98	15.296		
9,500.00	9,484.18	9,520.02	9,462.71	20.90	23.50	-104.78	-372.16	548.50	646.36	603.96	42.40	15.243		
9,600.00	9,584.18	9,630.04	9,572.67	21.10	23.71	90.00	-374.19	551.31	648.91	606.09	42.82	15.155		
9,700.00	9,684.18	9,740.15	9,682.77	21.30	23.92	90.07	-374.99	552.40	649.91	606.68	43.23	15.034		
9,800.00	9,784.18	9,841.55	9,784.18	21.50	24.10	90.07	-375.00	552.42	649.92	606.29	43.63	14.897		
9,900.00	9,884.18	9,941.55	9,884.18	21.70	24.29	90.07	-375.00	552.42	649.92	605.89	44.03	14.761		
10,000.00	9,983.73	10,041.79	9,984.09	21.87	24.45	90.21	-368.51	552.42	649.92	605.57	44.36	14.652		
10,100.00	10,080.37	10,142.34	10,081.67	21.96	24.53	90.35	-344.80	552.42	649.93	605.41	44.52	14.597		
10,200.00	10,171.17	10,243.17	10,173.86	21.99	24.55	90.49	-304.27	552.42	649.94	605.38	44.56	14.584		
10,300.00	10,253.37	10,344.27	10,257.74	21.98	24.52	90.61	-248.07	552.42	649.95	605.42	44.53	14.595		

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



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 452H (SIMOPS) - 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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
10,400.00	10,324.46	10,445.61	10,330.60	21.97	24.44	90.72	-177.84	552.42	649.96	605.46	44.50	14.605		
10,500.00	10,382.30	10,547.13	10,390.07	21.99	24.35	90.80	-95.72	552.42	649.97	605.42	44.55	14.590		
10,600.00	10,425.12	10,648.79	10,434.18	22.09	24.26	90.85	-4.27	552.42	649.97	605.23	44.74	14.527		
10,700.00	10,451.62	10,750.55	10,461.48	22.31	24.21	90.88	93.61	552.42	649.97	604.84	45.14	14.400		
10,799.61	10,460.99	10,851.89	10,471.05	22.64	24.26	90.89	194.37	552.43	649.97	604.22	45.75	14.207		
10,800.00	10,460.99	10,852.28	10,471.06	22.64	24.26	90.89	194.77	552.43	649.97	604.22	45.75	14.206		
10,900.00	10,460.71	10,952.27	10,472.11	23.11	24.49	91.01	294.75	552.43	649.99	603.36	46.62	13.941		
11,000.00	10,460.40	11,052.26	10,473.17	23.70	24.96	91.13	394.74	552.43	650.01	602.27	47.74	13.615		
11,100.00	10,460.08	11,152.26	10,474.23	24.42	25.59	91.25	494.72	552.43	650.03	600.93	49.11	13.237		
11,200.00	10,459.77	11,252.25	10,475.28	25.25	26.35	91.37	594.71	552.43	650.06	599.36	50.70	12.822		
11,300.00	10,459.46	11,352.24	10,476.34	26.18	27.22	91.49	694.69	552.43	650.09	597.59	52.49	12.384		
11,400.00	10,459.14	11,452.23	10,477.40	27.20	28.18	91.61	794.68	552.43	650.12	595.65	54.47	11.935		
11,500.00	10,458.83	11,552.22	10,478.45	28.30	29.22	91.73	894.66	552.43	650.15	593.53	56.62	11.483		
11,600.00	10,458.51	11,652.21	10,479.51	29.47	30.34	91.85	994.65	552.43	650.19	591.28	58.91	11.036		
11,700.00	10,458.20	11,752.20	10,480.57	30.71	31.52	91.97	1,094.63	552.43	650.23	588.89	61.34	10.601		
11,800.00	10,457.89	11,852.19	10,481.62	32.00	32.76	92.09	1,194.62	552.43	650.28	586.40	63.88	10.180		
11,900.00	10,457.57	11,952.18	10,482.68	33.35	34.05	92.21	1,294.60	552.43	650.32	583.80	66.52	9.776		
12,000.00	10,457.26	12,052.17	10,483.74	34.74	35.38	92.33	1,394.59	552.44	650.37	581.12	69.26	9.391		
12,100.00	10,456.95	12,152.16	10,484.79	36.16	36.76	92.45	1,494.57	552.44	650.43	578.35	72.07	9.025		
12,200.00	10,456.63	12,252.15	10,485.85	37.62	38.17	92.57	1,594.56	552.44	650.48	575.53	74.96	8.678		
12,300.00	10,456.32	12,352.14	10,486.91	39.12	39.62	92.69	1,694.54	552.44	650.54	572.64	77.90	8.351		
12,400.00	10,456.01	12,452.13	10,487.96	40.63	41.10	92.82	1,794.53	552.44	650.60	569.69	80.91	8.041		
12,500.00	10,455.69	12,552.12	10,489.02	42.18	42.60	92.94	1,894.51	552.44	650.66	566.70	83.96	7.750		
12,600.00	10,455.38	12,652.11	10,490.08	43.74	44.13	93.06	1,994.50	552.44	650.73	563.67	87.06	7.475		
12,700.00	10,455.07	12,752.11	10,491.13	45.33	45.68	93.18	2,094.48	552.44	650.80	560.60	90.20	7.215		
12,800.00	10,454.75	12,852.10	10,492.19	46.93	47.25	93.30	2,194.47	552.44	650.87	557.50	93.37	6.971		
12,900.00	10,454.44	12,952.09	10,493.24	48.55	48.84	93.42	2,294.45	552.44	650.95	554.37	96.57	6.740		
13,000.00	10,454.12	13,052.08	10,494.30	50.18	50.44	93.54	2,394.44	552.44	651.03	551.22	99.81	6.523		
13,100.00	10,453.81	13,152.07	10,495.36	51.83	52.06	93.66	2,494.42	552.45	651.11	548.04	103.07	6.317		
13,200.00	10,453.50	13,252.06	10,496.41	53.49	53.69	93.78	2,594.41	552.45	651.19	544.84	106.35	6.123		
13,300.00	10,453.18	13,352.05	10,497.47	55.15	55.33	93.90	2,694.39	552.45	651.28	541.63	109.65	5.939		
13,400.00	10,452.87	13,452.04	10,498.53	56.83	56.99	94.02	2,794.38	552.45	651.37	538.39	112.98	5.766		
13,500.00	10,452.56	13,552.03	10,499.58	58.52	58.65	94.14	2,894.36	552.45	651.46	535.14	116.32	5.601		
13,600.00	10,452.24	13,652.02	10,500.64	60.22	60.32	94.26	2,994.35	552.45	651.56	531.88	119.67	5.445		
13,700.00	10,451.93	13,752.01	10,501.70	61.92	62.01	94.38	3,094.33	552.45	651.66	528.61	123.04	5.296		
13,800.00	10,451.62	13,852.00	10,502.75	63.63	63.70	94.50	3,194.32	552.45	651.76	525.33	126.43	5.155		
13,900.00	10,451.30	13,951.99	10,503.81	65.34	65.39	94.62	3,294.30	552.45	651.86	522.04	129.82	5.021		
14,000.00	10,450.99	14,051.98	10,504.87	67.07	67.10	94.74	3,394.29	552.45	651.97	518.74	133.23	4.894		
14,100.00	10,450.68	14,151.97	10,505.92	68.79	68.81	94.86	3,494.27	552.45	652.08	515.44	136.64	4.772		
14,200.00	10,450.36	14,251.96	10,506.98	70.52	70.52	94.98	3,594.26	552.45	652.19	512.13	140.06	4.656		
14,300.00	10,450.05	14,351.95	10,508.04	72.26	72.25	95.10	3,694.24	552.46	652.31	508.81	143.50	4.546		
14,400.00	10,449.74	14,451.95	10,509.09	74.00	73.97	95.22	3,794.23	552.46	652.42	505.49	146.94	4.440		
14,500.00	10,449.42	14,551.94	10,510.15	75.75	75.70	95.34	3,894.21	552.46	652.55	502.16	150.38	4.339		
14,600.00	10,449.11	14,651.93	10,511.21	77.50	77.44	95.46	3,994.20	552.46	652.67	498.83	153.83	4.243		
14,700.00	10,448.79	14,751.92	10,512.26	79.25	79.18	95.58	4,094.18	552.46	652.80	495.50	157.29	4.150		
14,800.00	10,448.48	14,851.91	10,513.32	81.01	80.92	95.70	4,194.17	552.46	652.93	492.17	160.76	4.062		
14,900.00	10,448.17	14,951.90	10,514.38	82.77	82.67	95.82	4,294.15	552.46	653.06	488.84	164.22	3.977		
14,953.26	10,448.00	15,005.16	10,514.94	83.70	83.60	95.88	4,347.41	552.46	653.13	487.06	166.07	3.933		

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

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3431.4' GE + 30' KB @ 3461.40usft

Offset Depths are relative to Offset Datum

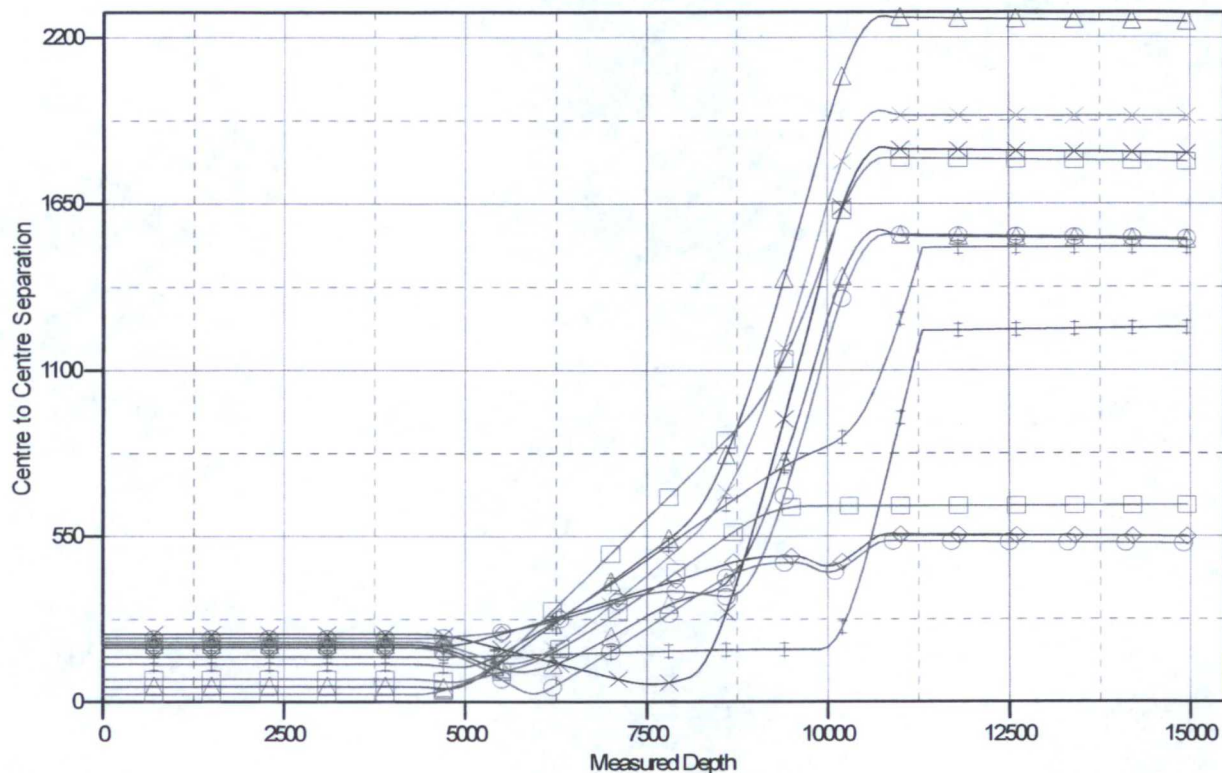
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 453H (SIMOPS)

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

Grid Convergence at Surface is: 0.33°

Ladder Plot



LEGEND

✕ 327H(SIMOPS), OH, Plan #1 V0	✕ 313H(SIMOPS), OH, Plan #1 V0	✕ 319H(SIMOPS), OH, Plan #1 V0
✕ 320H(SIMOPS), OH, Plan #1 V0	✕ 452H(SIMOPS), OH, Plan #1 V0	✕ 332H(SIMOPS), OH, Plan #1 V0
✕ 451H(SIMOPS), OH, Plan #1 V0	✕ 321H(SIMOPS), OH, Plan #1 V0	✕ 328H(SIMOPS), OH, Plan #1 V0
✕ 312H(SIMOPS), OH, Plan #1 V0	✕ 333H(SIMOPS), OH, Plan #1 V0	

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

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 453H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	453H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3431.4' GE + 30' KB @ 3461.40usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 453H (SIMOPS)
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.33°

