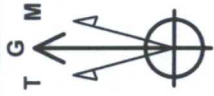
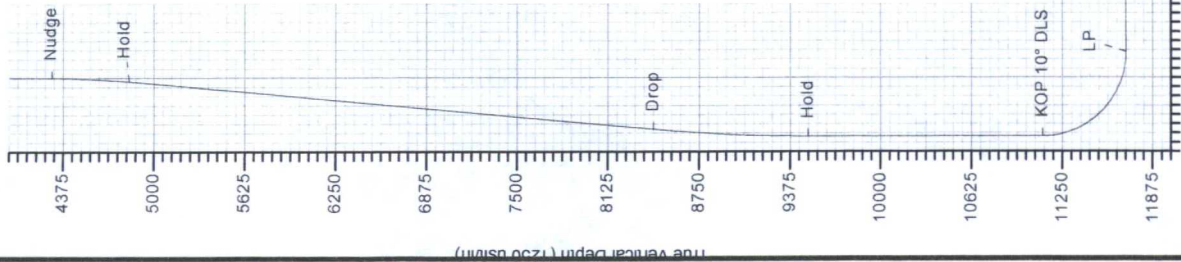




Project: Lea County, NM (NAD-83)
 Site: Cotton Draw Unit
 Well: 312H (SIMOPS)
 Wellbore: OH
 Design: Plan #1



Azimuths to Grid North
 True North: -0.33°
 Magnetic North: 6.95°
 Magnetic Field
 Strength: 48100.9snT
 Dip Angle: 60.03°
 Date: 12/16/2015
 Model: BGGM2015



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
SHL (CDU 312H)	0.00	0.00	0.00	414793.36	734340.44
PBHL (CDU 312H)	11690.00	4498.08	-97.69	419291.44	734242.75

SECTION DETAILS

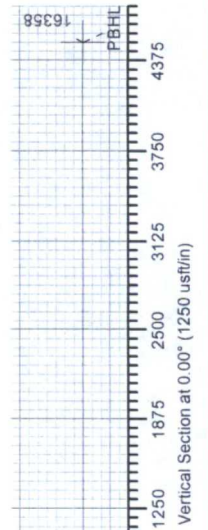
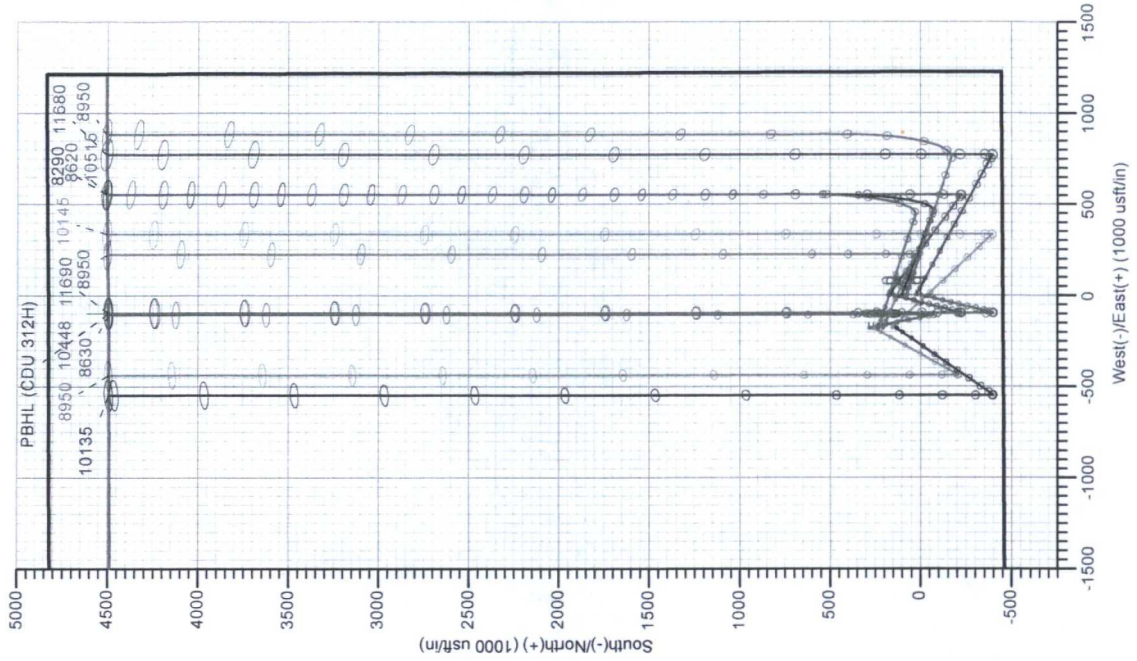
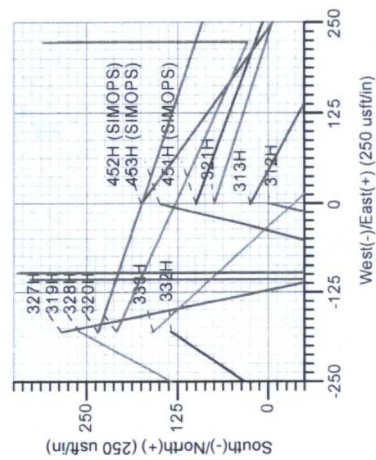
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00
8431.60	5.32	193.77	4830.84	-23.94	-5.87	1.00	193.77	-23.94
8454.67	5.32	193.77	8438.33	-349.96	-85.77	0.00	0.00	-349.96
9517.87	0.00	0.00	9500.00	-397.83	-97.50	0.00	180.00	-397.83
11134.91	0.00	0.00	11117.04	-397.83	-97.50	0.00	0.00	-397.83
12034.91	0.00	0.00	11690.00	175.13	-97.52	10.00	360.00	175.13
16357.86	90.00	360.00	11690.00	4498.08	-97.69	0.00	0.00	4498.08

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
- ⊥ 453H (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
312H (SIMOPS)

OH

Plan: Plan #1

Standard Planning Report

02 February, 2016





Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 312H (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:	312H (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	312H (SIMOPS)					
Well Position	+N/-S	651.11 usft	Northing:	414,793.36 usft	Latitude:	32° 8' 19.715 N
	+E/-W	373.01 usft	Easting:	734,340.44 usft	Longitude:	103° 42' 35.220 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	0.00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,831.60	5.32	193.77	4,830.84	-23.94	-5.87	1.00	1.00	0.00	193.77	
8,454.67	5.32	193.77	8,438.33	-349.96	-85.77	0.00	0.00	0.00	0.00	
9,517.87	0.00	0.00	9,500.00	-397.83	-97.50	0.50	-0.50	0.00	180.00	
11,134.91	0.00	0.00	11,117.04	-397.83	-97.50	0.00	0.00	0.00	0.00	
12,034.91	90.00	360.00	11,690.00	175.13	-97.52	10.00	10.00	0.00	360.00	
16,357.86	90.00	360.00	11,690.00	4,498.08	-97.69	0.00	0.00	0.00	0.00	PBHL (CDU 312H)



LEAM Drilling Systems LLC

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 312H (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:	312H (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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (CDU 312H)									
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
1,900.00	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	193.77	4,400.00	-0.85	-0.21	-0.85	1.00	1.00	0.00
4,500.00	2.00	193.77	4,499.96	-3.39	-0.83	-3.39	1.00	1.00	0.00
4,600.00	3.00	193.77	4,599.86	-7.63	-1.87	-7.63	1.00	1.00	0.00
4,700.00	4.00	193.77	4,699.68	-13.56	-3.32	-13.56	1.00	1.00	0.00
4,800.00	5.00	193.77	4,799.37	-21.18	-5.19	-21.18	1.00	1.00	0.00
4,831.60	5.32	193.77	4,830.84	-23.94	-5.87	-23.94	1.00	1.00	0.00
Hold									



LEAM Drilling Systems LLC

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 312H (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:	312H (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)
4,900.00	5.32	193.77	4,898.94	-30.09	-7.37	-30.09	0.00	0.00	0.00
5,000.00	5.32	193.77	4,998.51	-39.09	-9.58	-39.09	0.00	0.00	0.00
5,100.00	5.32	193.77	5,098.08	-48.09	-11.79	-48.09	0.00	0.00	0.00
5,200.00	5.32	193.77	5,197.65	-57.09	-13.99	-57.09	0.00	0.00	0.00
5,300.00	5.32	193.77	5,297.22	-66.08	-16.20	-66.08	0.00	0.00	0.00
5,400.00	5.32	193.77	5,396.79	-75.08	-18.40	-75.08	0.00	0.00	0.00
5,500.00	5.32	193.77	5,496.36	-84.08	-20.61	-84.08	0.00	0.00	0.00
5,600.00	5.32	193.77	5,595.93	-93.08	-22.81	-93.08	0.00	0.00	0.00
5,700.00	5.32	193.77	5,695.50	-102.08	-25.02	-102.08	0.00	0.00	0.00
5,800.00	5.32	193.77	5,795.07	-111.08	-27.22	-111.08	0.00	0.00	0.00
5,900.00	5.32	193.77	5,894.64	-120.08	-29.43	-120.08	0.00	0.00	0.00
6,000.00	5.32	193.77	5,994.21	-129.07	-31.63	-129.07	0.00	0.00	0.00
6,100.00	5.32	193.77	6,093.78	-138.07	-33.84	-138.07	0.00	0.00	0.00
6,200.00	5.32	193.77	6,193.35	-147.07	-36.04	-147.07	0.00	0.00	0.00
6,300.00	5.32	193.77	6,292.92	-156.07	-38.25	-156.07	0.00	0.00	0.00
6,400.00	5.32	193.77	6,392.49	-165.07	-40.45	-165.07	0.00	0.00	0.00
6,500.00	5.32	193.77	6,492.06	-174.07	-42.66	-174.07	0.00	0.00	0.00
6,600.00	5.32	193.77	6,591.63	-183.07	-44.87	-183.07	0.00	0.00	0.00
6,700.00	5.32	193.77	6,691.20	-192.06	-47.07	-192.06	0.00	0.00	0.00
6,800.00	5.32	193.77	6,790.77	-201.06	-49.28	-201.06	0.00	0.00	0.00
6,900.00	5.32	193.77	6,890.34	-210.06	-51.48	-210.06	0.00	0.00	0.00
7,000.00	5.32	193.77	6,989.91	-219.06	-53.69	-219.06	0.00	0.00	0.00
7,100.00	5.32	193.77	7,089.48	-228.06	-55.89	-228.06	0.00	0.00	0.00
7,200.00	5.32	193.77	7,189.05	-237.06	-58.10	-237.06	0.00	0.00	0.00
7,300.00	5.32	193.77	7,288.62	-246.06	-60.30	-246.06	0.00	0.00	0.00
7,400.00	5.32	193.77	7,388.19	-255.05	-62.51	-255.05	0.00	0.00	0.00
7,500.00	5.32	193.77	7,487.76	-264.05	-64.71	-264.05	0.00	0.00	0.00
7,600.00	5.32	193.77	7,587.33	-273.05	-66.92	-273.05	0.00	0.00	0.00
7,700.00	5.32	193.77	7,686.90	-282.05	-69.12	-282.05	0.00	0.00	0.00
7,800.00	5.32	193.77	7,786.47	-291.05	-71.33	-291.05	0.00	0.00	0.00
7,900.00	5.32	193.77	7,886.04	-300.05	-73.54	-300.05	0.00	0.00	0.00
8,000.00	5.32	193.77	7,985.61	-309.05	-75.74	-309.05	0.00	0.00	0.00
8,100.00	5.32	193.77	8,085.18	-318.04	-77.95	-318.04	0.00	0.00	0.00
8,200.00	5.32	193.77	8,184.75	-327.04	-80.15	-327.04	0.00	0.00	0.00
8,300.00	5.32	193.77	8,284.32	-336.04	-82.36	-336.04	0.00	0.00	0.00
8,400.00	5.32	193.77	8,383.89	-345.04	-84.56	-345.04	0.00	0.00	0.00
8,454.67	5.32	193.77	8,438.32	-349.96	-85.77	-349.96	0.00	0.00	0.00
Drop									
8,500.00	5.09	193.77	8,483.47	-353.95	-86.75	-353.95	0.50	-0.50	0.00
8,600.00	4.59	193.77	8,583.11	-362.15	-88.75	-362.15	0.50	-0.50	0.00
8,700.00	4.09	193.77	8,682.82	-369.49	-90.56	-369.49	0.50	-0.50	0.00
8,800.00	3.59	193.77	8,782.60	-376.00	-92.15	-376.00	0.50	-0.50	0.00
8,900.00	3.09	193.77	8,882.43	-381.66	-93.54	-381.66	0.50	-0.50	0.00
9,000.00	2.59	193.77	8,982.31	-386.47	-94.71	-386.47	0.50	-0.50	0.00
9,100.00	2.09	193.77	9,082.22	-390.43	-95.69	-390.43	0.50	-0.50	0.00
9,200.00	1.59	193.77	9,182.17	-393.55	-96.45	-393.55	0.50	-0.50	0.00
9,300.00	1.09	193.77	9,282.14	-395.82	-97.01	-395.82	0.50	-0.50	0.00
9,400.00	0.59	193.77	9,382.13	-397.24	-97.36	-397.24	0.50	-0.50	0.00
9,500.00	0.09	193.77	9,482.13	-397.82	-97.50	-397.82	0.50	-0.50	0.00
9,517.87	0.00	0.00	9,500.00	-397.83	-97.50	-397.83	0.50	-0.50	930.21
Hold									
9,600.00	0.00	0.00	9,582.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
9,700.00	0.00	0.00	9,682.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
9,800.00	0.00	0.00	9,782.13	-397.83	-97.50	-397.83	0.00	0.00	0.00



LEAM Drilling Systems LLC

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 312H (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:	312H (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)
9,900.00	0.00	0.00	9,882.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,000.00	0.00	0.00	9,982.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,100.00	0.00	0.00	10,082.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,200.00	0.00	0.00	10,182.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,300.00	0.00	0.00	10,282.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,400.00	0.00	0.00	10,382.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,500.00	0.00	0.00	10,482.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,600.00	0.00	0.00	10,582.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,700.00	0.00	0.00	10,682.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,800.00	0.00	0.00	10,782.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
10,900.00	0.00	0.00	10,882.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
11,000.00	0.00	0.00	10,982.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
11,100.00	0.00	0.00	11,082.13	-397.83	-97.50	-397.83	0.00	0.00	0.00
11,134.91	0.00	0.00	11,117.04	-397.83	-97.50	-397.83	0.00	0.00	0.00
KOP 10° DLS									
11,150.00	1.51	360.00	11,132.13	-397.63	-97.50	-397.63	10.00	10.00	0.00
11,200.00	6.51	360.00	11,181.99	-394.14	-97.50	-394.14	10.00	10.00	0.00
11,250.00	11.51	360.00	11,231.36	-386.31	-97.50	-386.31	10.00	10.00	0.00
11,300.00	16.51	360.00	11,279.85	-374.21	-97.50	-374.21	10.00	10.00	0.00
11,350.00	21.51	360.00	11,327.11	-357.93	-97.50	-357.93	10.00	10.00	0.00
11,400.00	26.51	360.00	11,372.77	-337.59	-97.50	-337.59	10.00	10.00	0.00
11,450.00	31.51	360.00	11,416.49	-313.35	-97.50	-313.35	10.00	10.00	0.00
11,500.00	36.51	360.00	11,457.92	-285.39	-97.50	-285.39	10.00	10.00	0.00
11,550.00	41.51	360.00	11,496.76	-253.93	-97.51	-253.93	10.00	10.00	0.00
11,600.00	46.51	360.00	11,532.71	-219.21	-97.51	-219.21	10.00	10.00	0.00
11,650.00	51.51	360.00	11,565.50	-181.48	-97.51	-181.48	10.00	10.00	0.00
11,700.00	56.51	360.00	11,594.87	-141.03	-97.51	-141.03	10.00	10.00	0.00
11,750.00	61.51	360.00	11,620.61	-98.19	-97.51	-98.19	10.00	10.00	0.00
11,800.00	66.51	360.00	11,642.51	-53.26	-97.51	-53.26	10.00	10.00	0.00
11,850.00	71.51	360.00	11,660.42	-6.59	-97.52	-6.59	10.00	10.00	0.00
11,900.00	76.51	360.00	11,674.19	41.46	-97.52	41.46	10.00	10.00	0.00
11,950.00	81.51	360.00	11,683.72	90.53	-97.52	90.53	10.00	10.00	0.00
12,000.00	86.51	360.00	11,688.93	140.24	-97.52	140.24	10.00	10.00	0.00
12,034.91	90.00	360.00	11,690.00	175.13	-97.52	175.13	10.00	10.00	0.00
LP									
12,100.00	90.00	360.00	11,690.00	240.22	-97.52	240.22	0.00	0.00	0.00
12,200.00	90.00	360.00	11,690.00	340.22	-97.53	340.22	0.00	0.00	0.00
12,300.00	90.00	360.00	11,690.00	440.22	-97.53	440.22	0.00	0.00	0.00
12,400.00	90.00	360.00	11,690.00	540.22	-97.54	540.22	0.00	0.00	0.00
12,500.00	90.00	360.00	11,690.00	640.22	-97.54	640.22	0.00	0.00	0.00
12,600.00	90.00	360.00	11,690.00	740.22	-97.54	740.22	0.00	0.00	0.00
12,700.00	90.00	360.00	11,690.00	840.22	-97.55	840.22	0.00	0.00	0.00
12,800.00	90.00	360.00	11,690.00	940.22	-97.55	940.22	0.00	0.00	0.00
12,900.00	90.00	360.00	11,690.00	1,040.22	-97.56	1,040.22	0.00	0.00	0.00
13,000.00	90.00	360.00	11,690.00	1,140.22	-97.56	1,140.22	0.00	0.00	0.00
13,100.00	90.00	360.00	11,690.00	1,240.22	-97.56	1,240.22	0.00	0.00	0.00
13,200.00	90.00	360.00	11,690.00	1,340.22	-97.57	1,340.22	0.00	0.00	0.00
13,300.00	90.00	360.00	11,690.00	1,440.22	-97.57	1,440.22	0.00	0.00	0.00
13,400.00	90.00	360.00	11,690.00	1,540.22	-97.58	1,540.22	0.00	0.00	0.00
13,500.00	90.00	360.00	11,690.00	1,640.22	-97.58	1,640.22	0.00	0.00	0.00
13,600.00	90.00	360.00	11,690.00	1,740.22	-97.58	1,740.22	0.00	0.00	0.00
13,700.00	90.00	360.00	11,690.00	1,840.22	-97.59	1,840.22	0.00	0.00	0.00
13,800.00	90.00	360.00	11,690.00	1,940.22	-97.59	1,940.22	0.00	0.00	0.00
13,900.00	90.00	360.00	11,690.00	2,040.22	-97.59	2,040.22	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 312H (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:	312H (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	90.00	360.00	11,690.00	2,140.22	-97.60	2,140.22	0.00	0.00	0.00	
14,100.00	90.00	360.00	11,690.00	2,240.22	-97.60	2,240.22	0.00	0.00	0.00	
14,200.00	90.00	360.00	11,690.00	2,340.22	-97.61	2,340.22	0.00	0.00	0.00	
14,300.00	90.00	360.00	11,690.00	2,440.22	-97.61	2,440.22	0.00	0.00	0.00	
14,400.00	90.00	360.00	11,690.00	2,540.22	-97.61	2,540.22	0.00	0.00	0.00	
14,500.00	90.00	360.00	11,690.00	2,640.22	-97.62	2,640.22	0.00	0.00	0.00	
14,600.00	90.00	360.00	11,690.00	2,740.22	-97.62	2,740.22	0.00	0.00	0.00	
14,700.00	90.00	360.00	11,690.00	2,840.22	-97.63	2,840.22	0.00	0.00	0.00	
14,800.00	90.00	360.00	11,690.00	2,940.22	-97.63	2,940.22	0.00	0.00	0.00	
14,900.00	90.00	360.00	11,690.00	3,040.22	-97.63	3,040.22	0.00	0.00	0.00	
15,000.00	90.00	360.00	11,690.00	3,140.22	-97.64	3,140.22	0.00	0.00	0.00	
15,100.00	90.00	360.00	11,690.00	3,240.22	-97.64	3,240.22	0.00	0.00	0.00	
15,200.00	90.00	360.00	11,690.00	3,340.22	-97.65	3,340.22	0.00	0.00	0.00	
15,300.00	90.00	360.00	11,690.00	3,440.22	-97.65	3,440.22	0.00	0.00	0.00	
15,400.00	90.00	360.00	11,690.00	3,540.22	-97.65	3,540.22	0.00	0.00	0.00	
15,500.00	90.00	360.00	11,690.00	3,640.22	-97.66	3,640.22	0.00	0.00	0.00	
15,600.00	90.00	360.00	11,690.00	3,740.22	-97.66	3,740.22	0.00	0.00	0.00	
15,700.00	90.00	360.00	11,690.00	3,840.22	-97.66	3,840.22	0.00	0.00	0.00	
15,800.00	90.00	360.00	11,690.00	3,940.22	-97.67	3,940.22	0.00	0.00	0.00	
15,900.00	90.00	360.00	11,690.00	4,040.22	-97.67	4,040.22	0.00	0.00	0.00	
16,000.00	90.00	360.00	11,690.00	4,140.22	-97.68	4,140.22	0.00	0.00	0.00	
16,100.00	90.00	360.00	11,690.00	4,240.22	-97.68	4,240.22	0.00	0.00	0.00	
16,200.00	90.00	360.00	11,690.00	4,340.22	-97.68	4,340.22	0.00	0.00	0.00	
16,300.00	90.00	360.00	11,690.00	4,440.22	-97.69	4,440.22	0.00	0.00	0.00	
16,357.86	90.00	360.00	11,690.00	4,498.08	-97.69	4,498.08	0.00	0.00	0.00	

TD - PBHL (CDU 312H)

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL (CDU 312H) - hit/miss target center - Shape - Point	0.00	0.00	0.00	0.00	0.00	414,793.36	734,340.44	32° 8' 19.715 N	103° 42' 35.220 W	
PBHL (CDU 312H) - plan hits target center - Point	0.00	0.00	11,690.00	4,498.08	-97.69	419,291.44	734,242.75	32° 9' 4.232 N	103° 42' 36.053 W	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
4,300.00	4,300.00	0.00	0.00	Nudge	
4,831.60	4,830.84	-23.94	-5.87	Hold	
8,454.67	8,438.32	-349.96	-85.77	Drop	
9,517.87	9,500.00	-397.83	-97.50	Hold	
11,134.91	11,117.04	-397.83	-97.50	KOP 10° DLS	
12,034.91	11,690.00	175.13	-97.52	LP	
16,357.86	11,690.00	4,498.08	-97.69	TD	



DEVON ENERGY

Lea County, NM (NAD-83)
Cotton Draw Unit
312H (SIMOPS)

OH
Plan #1

Anticollision Report

03 February, 2016





Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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	16,357.85	Plan #1 (OH)	LEAM MWD-ADJ	MWD - Standard

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Cotton Draw Unit						
313H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	24.99	5.95	1.313	Level 3, CC, ES
313H (SIMOPS) - OH - Plan #1	4,400.00	4,400.20	25.44	6.00	1.309	Level 3, SF
319H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	315.92	296.89	16.595	CC
319H (SIMOPS) - OH - Plan #1	5,900.00	5,921.31	320.68	295.14	12.553	ES
319H (SIMOPS) - OH - Plan #1	8,400.00	8,426.47	379.11	340.66	9.860	SF
320H (SIMOPS) - OH - Plan #1	5,524.46	5,549.09	252.23	228.46	10.609	CC
320H (SIMOPS) - OH - Plan #1	5,600.00	5,623.70	252.51	228.41	10.478	ES
320H (SIMOPS) - OH - Plan #1	6,000.00	6,018.83	262.86	236.97	10.152	SF
321H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	74.98	55.94	3.939	CC, ES
321H (SIMOPS) - OH - Plan #1	4,400.00	4,400.39	75.56	56.13	3.887	SF
327H (SIMOPS) - OH - Plan #1	7,380.66	7,406.66	208.17	177.01	6.682	CC
327H (SIMOPS) - OH - Plan #1	7,400.00	7,425.30	208.20	176.96	6.665	ES
327H (SIMOPS) - OH - Plan #1	7,500.00	7,521.71	209.42	177.76	6.615	SF
328H (SIMOPS) - OH - Plan #1	5,514.85	5,545.14	280.14	256.30	11.751	CC, ES
328H (SIMOPS) - OH - Plan #1	5,900.00	5,921.32	292.08	266.40	11.373	SF
332H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	224.83	205.79	11.810	CC
332H (SIMOPS) - OH - Plan #1	4,400.00	4,400.13	225.14	205.71	11.587	ES
332H (SIMOPS) - OH - Plan #1	9,800.00	9,818.53	452.34	408.11	10.227	SF
333H (SIMOPS) - OH - Plan #1	6,237.20	6,263.23	121.69	94.71	4.510	CC, ES
333H (SIMOPS) - OH - Plan #1	6,400.00	6,424.07	124.27	96.36	4.452	SF
451H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	99.97	80.93	5.251	CC, ES
451H (SIMOPS) - OH - Plan #1	4,500.00	4,501.11	102.22	82.43	5.166	SF
452H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	174.96	155.92	9.190	CC, ES
452H (SIMOPS) - OH - Plan #1	4,500.00	4,499.96	178.35	158.51	8.989	SF
453H (SIMOPS) - OH - Plan #1	4,793.89	4,806.42	149.51	128.77	7.209	CC
453H (SIMOPS) - OH - Plan #1	4,800.00	4,812.54	149.52	128.76	7.202	ES
453H (SIMOPS) - OH - Plan #1	9,900.00	9,897.95	173.58	131.85	4.160	SF

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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-0.16	24.99	-0.07	24.99				

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 312H (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:	312H (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 +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
100.00	100.00	100.00	100.00	0.08	0.08	-0.16	24.99	-0.07	24.99	24.83	0.16	158.832		
200.00	200.00	200.00	200.00	0.30	0.30	-0.16	24.99	-0.07	24.99	24.38	0.61	41.179		
300.00	300.00	300.00	300.00	0.53	0.53	-0.16	24.99	-0.07	24.99	23.93	1.06	23.656		
400.00	400.00	400.00	400.00	0.75	0.75	-0.16	24.99	-0.07	24.99	23.48	1.51	16.594		
500.00	500.00	500.00	500.00	0.98	0.98	-0.16	24.99	-0.07	24.99	23.03	1.96	12.780		
600.00	600.00	600.00	600.00	1.20	1.20	-0.16	24.99	-0.07	24.99	22.59	2.40	10.391		
700.00	700.00	700.00	700.00	1.43	1.43	-0.16	24.99	-0.07	24.99	22.14	2.85	8.755		
800.00	800.00	800.00	800.00	1.65	1.65	-0.16	24.99	-0.07	24.99	21.69	3.30	7.563		
900.00	900.00	900.00	900.00	1.88	1.88	-0.16	24.99	-0.07	24.99	21.24	3.75	6.658		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-0.16	24.99	-0.07	24.99	20.79	4.20	5.946		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-0.16	24.99	-0.07	24.99	20.34	4.65	5.371		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-0.16	24.99	-0.07	24.99	19.89	5.10	4.898		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-0.16	24.99	-0.07	24.99	19.44	5.55	4.501		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-0.16	24.99	-0.07	24.99	18.99	6.00	4.164		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-0.16	24.99	-0.07	24.99	18.54	6.45	3.874		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-0.16	24.99	-0.07	24.99	18.09	6.90	3.622		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-0.16	24.99	-0.07	24.99	17.64	7.35	3.400		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-0.16	24.99	-0.07	24.99	17.19	7.80	3.204		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-0.16	24.99	-0.07	24.99	16.74	8.25	3.030		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-0.16	24.99	-0.07	24.99	16.29	8.70	2.873		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-0.16	24.99	-0.07	24.99	15.84	9.15	2.732		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-0.16	24.99	-0.07	24.99	15.39	9.60	2.604		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-0.16	24.99	-0.07	24.99	14.94	10.05	2.487		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-0.16	24.99	-0.07	24.99	14.49	10.50	2.381		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-0.16	24.99	-0.07	24.99	14.04	10.95	2.283		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-0.16	24.99	-0.07	24.99	13.59	11.40	2.193		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-0.16	24.99	-0.07	24.99	13.14	11.85	2.110		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-0.16	24.99	-0.07	24.99	12.70	12.29	2.033		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-0.16	24.99	-0.07	24.99	12.25	12.74	1.961		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-0.16	24.99	-0.07	24.99	11.80	13.19	1.894		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-0.16	24.99	-0.07	24.99	11.35	13.64	1.832		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-0.16	24.99	-0.07	24.99	10.90	14.09	1.773		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-0.16	24.99	-0.07	24.99	10.45	14.54	1.718		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-0.16	24.99	-0.07	24.99	10.00	14.99	1.667		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-0.16	24.99	-0.07	24.99	9.55	15.44	1.618		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-0.16	24.99	-0.07	24.99	9.10	15.89	1.573		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-0.16	24.99	-0.07	24.99	8.65	16.34	1.529		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-0.16	24.99	-0.07	24.99	8.20	16.79	1.488	Level 3	
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-0.16	24.99	-0.07	24.99	7.75	17.24	1.450	Level 3	
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-0.16	24.99	-0.07	24.99	7.30	17.69	1.413	Level 3	
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-0.16	24.99	-0.07	24.99	6.85	18.14	1.378	Level 3	
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-0.16	24.99	-0.07	24.99	6.40	18.59	1.344	Level 3	
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-0.16	24.99	-0.07	24.99	5.95	19.04	1.313	Level 3, CC, ES	
4,400.00	4,400.00	4,400.20	4,400.19	9.71	9.72	168.27	24.57	0.70	25.44	6.00	19.43	1.309	Level 3, SF	
4,500.00	4,499.96	4,500.33	4,500.29	9.88	9.91	174.41	23.32	3.01	26.99	7.21	19.78	1.364	Level 3	
4,600.00	4,599.86	4,600.32	4,600.18	10.05	10.09	-176.97	21.24	6.85	30.15	10.03	20.12	1.499	Level 3	
4,700.00	4,699.68	4,700.11	4,699.78	10.23	10.28	-167.78	18.33	12.21	35.47	15.00	20.47	1.733		
4,800.00	4,799.37	4,799.63	4,798.99	10.40	10.48	-159.55	14.61	19.07	43.23	22.42	20.81	2.077		
4,900.00	4,898.94	4,898.83	4,897.74	10.58	10.67	-152.73	10.08	27.41	53.16	31.98	21.18	2.510		
5,000.00	4,998.51	4,997.76	4,996.04	10.77	10.88	-146.67	4.76	37.23	64.19	42.62	21.57	2.976		
5,100.00	5,098.08	5,096.35	5,093.79	10.96	11.09	-141.25	-1.35	48.50	76.40	54.44	21.96	3.479		
5,200.00	5,197.65	5,194.55	5,190.92	11.15	11.31	-136.39	-8.23	61.19	89.91	67.55	22.36	4.021		

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 312H (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:	312H (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		
5,300.00	5,297.22	5,292.57	5,287.63	11.34	11.53	-132.06	-15.86	75.26	104.78	82.01	22.77	4.602		
5,400.00	5,396.79	5,391.13	5,384.79	11.55	11.77	-128.62	-23.74	89.78	120.34	97.16	23.18	5.191		
5,500.00	5,496.36	5,489.69	5,481.95	11.75	12.01	-125.98	-31.61	104.29	136.24	112.64	23.60	5.772		
5,600.00	5,595.93	5,588.24	5,579.11	11.96	12.27	-123.89	-39.49	118.81	152.36	128.33	24.03	6.341		
5,700.00	5,695.50	5,686.80	5,676.28	12.17	12.52	-122.21	-47.36	133.33	168.64	144.18	24.46	6.895		
5,800.00	5,795.07	5,785.35	5,773.44	12.38	12.79	-120.81	-55.23	147.85	185.03	160.14	24.89	7.433		
5,900.00	5,894.64	5,883.91	5,870.60	12.59	13.06	-119.65	-63.11	162.37	201.52	176.18	25.34	7.954		
6,000.00	5,994.21	5,982.46	5,967.76	12.81	13.33	-118.66	-70.98	176.89	218.07	192.29	25.78	8.458		
6,100.00	6,093.78	6,081.02	6,064.92	13.03	13.61	-117.81	-78.86	191.40	234.68	208.45	26.23	8.946		
6,200.00	6,193.35	6,179.58	6,162.09	13.26	13.90	-117.08	-86.73	205.92	251.33	224.64	26.69	9.418		
6,300.00	6,292.92	6,278.13	6,259.25	13.48	14.18	-116.43	-94.60	220.44	268.02	240.87	27.15	9.873		
6,400.00	6,392.49	6,376.69	6,356.41	13.71	14.48	-115.87	-102.48	234.96	284.73	257.12	27.61	10.312		
6,500.00	6,492.06	6,475.24	6,453.57	13.94	14.77	-115.36	-110.35	249.48	301.47	273.39	28.08	10.737		
6,600.00	6,591.63	6,573.80	6,550.74	14.17	15.07	-114.91	-118.22	264.00	318.23	289.68	28.55	11.147		
6,700.00	6,691.20	6,672.36	6,647.90	14.41	15.38	-114.50	-126.10	278.51	335.01	305.99	29.02	11.542		
6,800.00	6,790.77	6,770.91	6,745.06	14.64	15.68	-114.13	-133.97	293.03	351.80	322.30	29.50	11.924		
6,900.00	6,890.34	6,869.47	6,842.22	14.88	15.99	-113.80	-141.85	307.55	368.61	338.63	29.98	12.293		
7,000.00	6,989.91	6,968.02	6,939.38	15.12	16.31	-113.49	-149.72	322.07	385.43	354.96	30.47	12.650		
7,100.00	7,089.48	7,066.58	7,036.55	15.36	16.62	-113.21	-157.59	336.59	402.25	371.30	30.96	12.994		
7,200.00	7,189.05	7,165.13	7,133.71	15.60	16.94	-112.95	-165.47	351.11	419.09	387.64	31.45	13.327		
7,300.00	7,288.62	7,263.69	7,230.87	15.84	17.26	-112.71	-173.34	365.62	435.93	403.99	31.94	13.648		
7,400.00	7,388.19	7,362.25	7,328.03	16.09	17.58	-112.49	-181.22	380.14	452.78	420.34	32.44	13.959		
7,500.00	7,487.76	7,460.80	7,425.19	16.33	17.91	-112.29	-189.09	394.66	469.64	436.70	32.93	14.260		
7,600.00	7,587.33	7,559.36	7,522.36	16.58	18.24	-112.10	-196.96	409.18	486.50	453.06	33.44	14.550		
7,700.00	7,686.90	7,657.91	7,619.52	16.83	18.56	-111.92	-204.84	423.70	503.36	469.42	33.94	14.832		
7,800.00	7,786.47	7,756.47	7,716.68	17.08	18.89	-111.76	-212.71	438.21	520.23	485.79	34.44	15.104		
7,900.00	7,886.04	7,855.03	7,813.84	17.33	19.23	-111.60	-220.59	452.73	537.11	502.16	34.95	15.367		
8,000.00	7,985.61	7,953.58	7,911.01	17.58	19.56	-111.45	-228.46	467.25	553.99	518.53	35.46	15.623		
8,100.00	8,085.18	8,052.14	8,008.17	17.83	19.90	-111.32	-236.33	481.77	570.87	534.90	35.97	15.870		
8,200.00	8,184.75	8,150.69	8,105.33	18.08	20.23	-111.19	-244.21	496.29	587.75	551.27	36.48	16.110		
8,300.00	8,284.32	8,249.25	8,202.49	18.34	20.57	-111.06	-252.08	510.81	604.64	567.64	37.00	16.342		
8,400.00	8,383.89	8,347.81	8,299.65	18.59	20.91	-110.95	-259.95	525.32	621.53	584.01	37.52	16.567		
8,500.00	8,483.47	8,446.37	8,396.82	18.84	21.25	-110.87	-267.83	539.84	638.39	600.35	38.03	16.785		
8,600.00	8,583.11	8,544.96	8,494.02	19.08	21.60	-110.77	-275.71	554.37	654.99	616.45	38.54	16.995		
8,700.00	8,682.82	8,643.58	8,591.25	19.31	21.94	-110.62	-283.59	568.90	671.30	632.26	39.04	17.194		
8,800.00	8,782.60	8,742.23	8,688.50	19.54	22.29	-110.40	-291.47	583.43	687.32	647.78	39.54	17.383		
8,900.00	8,882.43	8,840.90	8,785.77	19.76	22.63	-110.13	-299.35	597.96	703.05	663.02	40.03	17.563		
9,000.00	8,982.31	8,939.57	8,883.05	19.98	22.98	-109.80	-307.23	612.50	718.53	678.01	40.51	17.735		
9,100.00	9,082.22	9,038.25	8,980.33	20.20	23.33	-109.43	-315.12	627.03	733.74	692.75	40.99	17.900		
9,200.00	9,182.17	9,141.64	9,082.32	20.42	23.65	-109.00	-323.22	641.98	748.46	707.01	41.45	18.057		
9,300.00	9,282.14	9,246.25	9,185.66	20.62	23.95	-108.55	-330.98	656.29	762.21	720.32	41.89	18.196		
9,400.00	9,382.13	9,351.13	9,289.40	20.83	24.24	-108.09	-338.31	669.80	774.98	732.66	42.32	18.313		
9,500.00	9,482.13	9,456.25	9,393.52	21.03	24.53	-107.62	-345.20	682.51	786.78	744.04	42.74	18.407		
9,600.00	9,582.13	9,561.61	9,498.01	21.23	24.81	-107.14	-351.65	694.40	797.69	754.53	43.16	18.484		
9,700.00	9,682.13	9,667.21	9,602.85	21.43	25.09	-106.67	-357.65	705.47	807.87	764.30	43.57	18.542		
9,800.00	9,782.13	9,773.04	9,708.04	21.63	25.36	-106.19	-363.21	715.71	817.31	773.33	43.98	18.582		
9,900.00	9,882.13	9,879.07	9,813.53	21.83	25.62	-105.71	-368.31	725.11	826.00	781.60	44.40	18.604		
10,000.00	9,982.13	9,985.30	9,919.31	22.03	25.88	-105.23	-372.95	733.68	833.92	789.10	44.81	18.609		
10,100.00	10,082.13	10,091.69	10,025.34	22.23	26.13	-104.75	-377.13	741.39	841.06	795.83	45.23	18.597		
10,200.00	10,182.13	10,198.25	10,131.61	22.43	26.37	-104.27	-380.85	748.24	847.42	801.78	45.64	18.568		
10,300.00	10,282.13	10,304.93	10,238.08	22.63	26.60	-103.79	-384.10	754.23	852.98	806.93	46.05	18.522		
10,400.00	10,382.13	10,411.74	10,344.73	22.83	26.82	-103.31	-386.88	759.36	857.74	811.28	46.46	18.460		

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 312H (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:	312H (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		
10,500.00	10,482.13	10,518.65	10,451.52	23.04	27.04	89.43	-389.19	763.61	861.70	814.83	46.87	18.383		
10,600.00	10,582.13	10,625.63	10,558.44	23.24	27.25	89.55	-391.02	767.00	864.85	817.56	47.29	18.290		
10,700.00	10,682.13	10,732.68	10,665.45	23.44	27.45	89.64	-392.38	769.50	867.18	819.48	47.69	18.182		
10,800.00	10,782.13	10,839.78	10,772.53	23.65	27.65	89.70	-393.27	771.13	868.69	820.59	48.10	18.059		
10,900.00	10,882.13	10,946.90	10,879.64	23.85	27.83	89.73	-393.67	771.88	869.39	820.88	48.51	17.922		
11,000.00	10,982.13	11,049.38	10,982.13	24.06	28.01	89.73	-393.70	771.93	869.44	820.53	48.91	17.775		
11,100.00	11,082.13	11,149.38	11,082.13	24.26	28.19	89.73	-393.70	771.93	869.44	820.12	49.32	17.629		
11,110.39	11,092.52	11,159.77	11,092.52	24.28	28.21	89.73	-393.70	771.93	869.44	820.08	49.36	17.615		
11,200.00	11,181.99	11,248.92	11,181.53	24.45	28.35	89.73	-390.06	771.93	869.44	819.75	49.69	17.498		
11,300.00	11,279.85	11,348.21	11,278.73	24.57	28.45	89.74	-370.41	771.93	869.44	819.53	49.91	17.420		
11,400.00	11,372.77	11,447.55	11,371.13	24.62	28.49	89.76	-334.28	771.93	869.44	819.45	49.99	17.391		
11,500.00	11,457.92	11,546.93	11,455.95	24.63	28.47	89.78	-282.72	771.93	869.44	819.46	49.99	17.394		
11,600.00	11,532.71	11,646.39	11,530.65	24.62	28.41	89.81	-217.24	771.93	869.44	819.50	49.94	17.408		
11,700.00	11,594.87	11,745.94	11,592.96	24.62	28.32	89.85	-139.77	771.93	869.45	819.51	49.94	17.410		
11,800.00	11,642.51	11,845.60	11,640.99	24.66	28.24	89.89	-52.60	771.93	869.45	819.42	50.03	17.377		
11,900.00	11,674.19	11,945.36	11,673.24	24.79	28.18	89.94	41.68	771.94	869.45	819.17	50.28	17.291		
12,000.00	11,688.93	12,045.25	11,688.67	25.03	28.18	89.98	140.24	771.94	869.46	818.74	50.72	17.143		
12,100.00	11,690.00	12,145.24	11,689.86	25.38	28.29	89.99	240.20	771.94	869.46	818.09	51.37	16.926		
12,200.00	11,690.00	12,245.24	11,689.63	25.86	28.54	89.98	340.20	771.94	869.47	817.22	52.25	16.640		
12,300.00	11,690.00	12,345.24	11,689.40	26.45	28.95	89.96	440.20	771.94	869.47	816.11	53.37	16.292		
12,400.00	11,690.00	12,445.24	11,689.17	27.14	29.49	89.95	540.20	771.94	869.48	814.77	54.71	15.894		
12,500.00	11,690.00	12,545.24	11,688.93	27.94	30.17	89.93	640.20	771.94	869.49	813.24	56.25	15.457		
12,600.00	11,690.00	12,645.24	11,688.70	28.84	30.95	89.91	740.20	771.95	869.49	811.51	57.98	14.995		
12,700.00	11,690.00	12,745.24	11,688.47	29.82	31.83	89.90	840.20	771.95	869.50	809.61	59.89	14.518		
12,800.00	11,690.00	12,845.24	11,688.24	30.87	32.79	89.88	940.20	771.95	869.50	807.55	61.96	14.034		
12,900.00	11,690.00	12,945.24	11,688.01	32.00	33.83	89.87	1,040.20	771.95	869.51	805.35	64.16	13.552		
13,000.00	11,690.00	13,045.24	11,687.78	33.18	34.93	89.85	1,140.20	771.95	869.51	803.02	66.50	13.076		
13,100.00	11,690.00	13,145.24	11,687.55	34.43	36.09	89.84	1,240.20	771.95	869.52	800.58	68.94	12.612		
13,200.00	11,690.00	13,245.24	11,687.32	35.72	37.30	89.82	1,340.20	771.95	869.53	798.03	71.50	12.162		
13,300.00	11,690.00	13,345.24	11,687.08	37.06	38.57	89.81	1,440.20	771.96	869.53	795.39	74.14	11.728		
13,400.00	11,690.00	13,445.24	11,686.85	38.44	39.87	89.79	1,540.20	771.96	869.54	792.67	76.87	11.312		
13,500.00	11,690.00	13,545.24	11,686.62	39.85	41.22	89.78	1,640.20	771.96	869.54	789.88	79.67	10.915		
13,600.00	11,690.00	13,645.24	11,686.39	41.30	42.60	89.76	1,740.20	771.96	869.55	787.01	82.54	10.535		
13,700.00	11,690.00	13,745.24	11,686.16	42.78	44.01	89.75	1,840.20	771.96	869.56	784.09	85.46	10.175		
13,800.00	11,690.00	13,845.24	11,685.93	44.28	45.45	89.73	1,940.20	771.96	869.56	781.12	88.45	9.832		
13,900.00	11,690.00	13,945.24	11,685.70	45.80	46.92	89.72	2,040.20	771.96	869.57	778.09	91.48	9.506		
14,000.00	11,690.00	14,045.24	11,685.47	47.35	48.42	89.70	2,140.19	771.97	869.58	775.02	94.55	9.197		
14,100.00	11,690.00	14,145.24	11,685.23	48.92	49.93	89.69	2,240.19	771.97	869.58	771.91	97.67	8.903		
14,200.00	11,690.00	14,245.24	11,685.00	50.50	51.47	89.67	2,340.19	771.97	869.59	768.77	100.82	8.625		
14,300.00	11,690.00	14,345.24	11,684.77	52.10	53.02	89.66	2,440.19	771.97	869.60	765.59	104.00	8.361		
14,400.00	11,690.00	14,445.24	11,684.54	53.72	54.59	89.64	2,540.19	771.97	869.60	762.38	107.22	8.111		
14,500.00	11,690.00	14,545.24	11,684.31	55.35	56.17	89.63	2,640.19	771.97	869.61	759.15	110.46	7.873		
14,600.00	11,690.00	14,645.23	11,684.08	56.98	57.77	89.61	2,740.19	771.97	869.62	755.89	113.73	7.647		
14,700.00	11,690.00	14,745.23	11,683.85	58.64	59.39	89.59	2,840.19	771.98	869.62	752.61	117.02	7.432		
14,800.00	11,690.00	14,845.23	11,683.62	60.30	61.01	89.58	2,940.19	771.98	869.63	749.30	120.33	7.227		
14,900.00	11,690.00	14,945.23	11,683.39	61.97	62.65	89.56	3,040.19	771.98	869.64	745.98	123.66	7.033		
15,000.00	11,690.00	15,045.23	11,683.15	63.65	64.29	89.55	3,140.19	771.98	869.64	742.64	127.01	6.847		
15,100.00	11,690.00	15,145.23	11,682.92	65.33	65.95	89.53	3,240.19	771.98	869.65	739.28	130.37	6.671		
15,200.00	11,690.00	15,245.23	11,682.69	67.03	67.61	89.52	3,340.19	771.98	869.66	735.91	133.75	6.502		
15,300.00	11,690.00	15,345.23	11,682.46	68.73	69.28	89.50	3,440.19	771.98	869.67	732.52	137.14	6.341		
15,400.00	11,690.00	15,445.23	11,682.23	70.44	70.96	89.49	3,540.19	771.99	869.67	729.12	140.55	6.188		
15,500.00	11,690.00	15,545.23	11,682.00	72.15	72.65	89.47	3,640.19	771.99	869.68	725.71	143.97	6.041		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 313H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,600.00	11,690.00	15,645.23	11,681.77	73.87	74.34	89.46	3,740.19	771.99	869.69	722.29	147.40	5.900		
15,700.00	11,690.00	15,745.23	11,681.54	75.59	76.04	89.44	3,840.19	771.99	869.69	718.85	150.84	5.766		
15,800.00	11,690.00	15,845.23	11,681.30	77.32	77.75	89.43	3,940.19	771.99	869.70	715.41	154.29	5.637		
15,900.00	11,690.00	15,945.23	11,681.07	79.05	79.46	89.41	4,040.18	771.99	869.71	711.96	157.75	5.513		
16,000.00	11,690.00	16,045.23	11,680.84	80.79	81.17	89.40	4,140.18	771.99	869.72	708.50	161.22	5.395		
16,100.00	11,690.00	16,145.23	11,680.61	82.53	82.89	89.38	4,240.18	771.99	869.73	705.03	164.70	5.281		
16,200.00	11,690.00	16,245.23	11,680.38	84.28	84.62	89.37	4,340.18	772.00	869.73	701.55	168.18	5.171		
16,300.00	11,690.00	16,345.23	11,680.15	86.02	86.35	89.35	4,440.18	772.00	869.74	698.07	171.67	5.066		
16,357.86	11,690.00	16,403.09	11,680.02	87.04	87.35	89.34	4,498.04	772.00	869.75	696.05	173.69	5.007		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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	-34.93	259.02	-180.88	315.92					
100.00	100.00	100.00	100.00	0.08	0.08	-34.93	259.02	-180.88	315.92	315.77	0.16	2,007.950		
200.00	200.00	200.00	200.00	0.30	0.30	-34.93	259.02	-180.88	315.92	315.32	0.61	520.580		
300.00	300.00	300.00	300.00	0.53	0.53	-34.93	259.02	-180.88	315.92	314.87	1.06	299.057		
400.00	400.00	400.00	400.00	0.75	0.75	-34.93	259.02	-180.88	315.92	314.42	1.51	209.786		
500.00	500.00	500.00	500.00	0.98	0.98	-34.93	259.02	-180.88	315.92	313.97	1.96	161.559		
600.00	600.00	600.00	600.00	1.20	1.20	-34.93	259.02	-180.88	315.92	313.52	2.40	131.361		
700.00	700.00	700.00	700.00	1.43	1.43	-34.93	259.02	-180.88	315.92	313.07	2.85	110.675		
800.00	800.00	800.00	800.00	1.65	1.65	-34.93	259.02	-180.88	315.92	312.62	3.30	95.617		
900.00	900.00	900.00	900.00	1.88	1.88	-34.93	259.02	-180.88	315.92	312.17	3.75	84.166		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-34.93	259.02	-180.88	315.92	311.72	4.20	75.164		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-34.93	259.02	-180.88	315.92	311.27	4.65	67.902		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-34.93	259.02	-180.88	315.92	310.82	5.10	61.919		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-34.93	259.02	-180.88	315.92	310.37	5.55	56.906		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-34.93	259.02	-180.88	315.92	309.92	6.00	52.643		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-34.93	259.02	-180.88	315.92	309.47	6.45	48.974		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-34.93	259.02	-180.88	315.92	309.02	6.90	45.784		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-34.93	259.02	-180.88	315.92	308.57	7.35	42.984		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-34.93	259.02	-180.88	315.92	308.12	7.80	40.506		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-34.93	259.02	-180.88	315.92	307.67	8.25	38.299		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-34.93	259.02	-180.88	315.92	307.23	8.70	36.320		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-34.93	259.02	-180.88	315.92	306.78	9.15	34.535		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-34.93	259.02	-180.88	315.92	306.33	9.60	32.917		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-34.93	259.02	-180.88	315.92	305.88	10.05	31.444		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-34.93	259.02	-180.88	315.92	305.43	10.50	30.098		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-34.93	259.02	-180.88	315.92	304.98	10.95	28.862		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-34.93	259.02	-180.88	315.92	304.53	11.40	27.723		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-34.93	259.02	-180.88	315.92	304.08	11.85	26.671		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-34.93	259.02	-180.88	315.92	303.63	12.29	25.696		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-34.93	259.02	-180.88	315.92	303.18	12.74	24.790		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-34.93	259.02	-180.88	315.92	302.73	13.19	23.945		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-34.93	259.02	-180.88	315.92	302.28	13.64	23.156		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-34.93	259.02	-180.88	315.92	301.83	14.09	22.417		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-34.93	259.02	-180.88	315.92	301.38	14.54	21.724		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-34.93	259.02	-180.88	315.92	300.93	14.99	21.073		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-34.93	259.02	-180.88	315.92	300.48	15.44	20.459		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-34.93	259.02	-180.88	315.92	300.03	15.89	19.881		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-34.93	259.02	-180.88	315.92	299.58	16.34	19.334		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-34.93	259.02	-180.88	315.92	299.13	16.79	18.816		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-34.93	259.02	-180.88	315.92	298.68	17.24	18.326		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-34.93	259.02	-180.88	315.92	298.23	17.69	17.860		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-34.93	259.02	-180.88	315.92	297.79	18.14	17.417		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-34.93	259.02	-180.88	315.92	297.34	18.59	16.996		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-34.93	259.02	-180.88	315.92	296.89	19.04	16.595	CC	
4,400.00	4,400.00	4,402.50	4,402.49	9.71	9.72	131.27	258.22	-181.32	316.10	296.67	19.43	16.266		
4,500.00	4,499.96	4,504.99	4,504.95	9.88	9.90	131.19	255.81	-182.65	316.65	296.87	19.77	16.013		
4,600.00	4,599.86	4,607.47	4,607.33	10.05	10.08	131.05	251.79	-184.86	317.55	297.44	20.12	15.786		
4,700.00	4,699.68	4,709.95	4,709.60	10.23	10.26	130.85	246.18	-187.95	318.82	298.36	20.46	15.581		
4,800.00	4,799.37	4,812.40	4,811.72	10.40	10.44	130.60	238.96	-191.92	320.46	299.65	20.81	15.398		
4,900.00	4,898.94	4,914.84	4,913.66	10.58	10.63	130.25	230.15	-196.78	322.20	301.03	21.18	15.214		
5,000.00	4,998.51	5,017.20	5,015.33	10.77	10.83	129.62	219.75	-202.50	323.27	301.71	21.56	14.995		
5,100.00	5,098.08	5,119.44	5,116.65	10.96	11.03	128.71	207.78	-209.10	323.64	301.69	21.95	14.745		

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 312H (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:	312H (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	Warning		
5,200.00	5,197.65	5,221.48	5,217.52	11.15	11.24	127.50	194.25	-216.55	323.41	301.06	22.35	14.469			
5,300.00	5,297.22	5,323.27	5,317.84	11.34	11.47	126.00	179.19	-224.84	322.68	299.91	22.77	14.171			
5,400.00	5,396.79	5,423.89	5,416.73	11.55	11.70	124.24	162.93	-233.80	321.63	298.42	23.20	13.862			
5,500.00	5,496.36	5,523.37	5,514.45	11.75	11.94	122.45	146.61	-242.79	320.80	297.15	23.65	13.567			
5,600.00	5,595.93	5,622.85	5,612.17	11.96	12.19	120.64	130.29	-251.78	320.28	296.18	24.10	13.288			
5,700.00	5,695.50	5,722.34	5,709.90	12.17	12.45	118.84	113.97	-260.76	320.10	295.52	24.57	13.027			
5,708.87	5,704.34	5,731.16	5,718.57	12.18	12.47	118.68	112.52	-261.56	320.09	295.48	24.61	13.004			
5,800.00	5,795.07	5,821.82	5,807.62	12.38	12.72	117.03	97.65	-269.75	320.23	295.17	25.05	12.782			
5,900.00	5,894.64	5,921.31	5,905.35	12.59	12.99	115.23	81.34	-278.74	320.68	295.14	25.55	12.553 ES			
6,000.00	5,994.21	6,020.79	6,003.07	12.81	13.27	113.43	65.02	-287.73	321.45	295.41	26.05	12.341			
6,100.00	6,093.78	6,120.27	6,100.79	13.03	13.56	111.65	48.70	-296.71	322.55	295.99	26.56	12.144			
6,200.00	6,193.35	6,219.76	6,198.52	13.26	13.85	109.87	32.38	-305.70	323.95	296.87	27.08	11.962			
6,300.00	6,292.92	6,319.24	6,296.24	13.48	14.15	108.12	16.06	-314.69	325.67	298.06	27.61	11.795			
6,400.00	6,392.49	6,418.72	6,393.97	13.71	14.46	106.38	-0.26	-323.67	327.69	299.54	28.15	11.642			
6,500.00	6,492.06	6,518.21	6,491.69	13.94	14.77	104.67	-16.57	-332.66	330.01	301.32	28.69	11.504			
6,600.00	6,591.63	6,617.69	6,589.41	14.17	15.08	102.98	-32.89	-341.65	332.62	303.39	29.23	11.378			
6,700.00	6,691.20	6,717.18	6,687.14	14.41	15.40	101.32	-49.21	-350.64	335.52	305.74	29.78	11.265			
6,800.00	6,790.77	6,816.66	6,784.86	14.64	15.73	99.69	-65.53	-359.62	338.70	308.37	30.34	11.164			
6,900.00	6,890.34	6,916.14	6,882.59	14.88	16.05	98.09	-81.85	-368.61	342.16	311.26	30.89	11.075			
7,000.00	6,989.91	7,015.63	6,980.31	15.12	16.39	96.52	-98.16	-377.60	345.87	314.42	31.45	10.996			
7,100.00	7,089.48	7,115.11	7,078.03	15.36	16.72	94.99	-114.48	-386.59	349.84	317.83	32.01	10.928			
7,200.00	7,189.05	7,215.51	7,176.74	15.60	17.04	93.55	-130.54	-395.43	353.96	321.40	32.56	10.871			
7,300.00	7,288.62	7,316.49	7,276.33	15.84	17.34	92.41	-145.21	-403.51	357.93	324.84	33.09	10.818			
7,400.00	7,388.19	7,417.72	7,376.43	16.09	17.63	91.56	-158.38	-410.76	361.61	328.01	33.61	10.760			
7,500.00	7,487.76	7,519.13	7,476.97	16.33	17.92	91.01	-170.01	-417.17	364.95	330.82	34.12	10.694			
7,600.00	7,587.33	7,620.66	7,577.84	16.58	18.19	90.73	-180.09	-422.72	367.87	333.23	34.64	10.621			
7,700.00	7,686.90	7,722.25	7,678.96	16.83	18.44	90.73	-188.61	-427.41	370.36	335.22	35.14	10.539			
7,800.00	7,786.47	7,823.82	7,780.22	17.08	18.69	90.99	-195.56	-431.24	372.42	336.77	35.64	10.449			
7,900.00	7,886.04	7,923.33	7,881.54	17.33	18.93	91.52	-200.93	-434.20	374.06	337.93	36.13	10.353			
8,000.00	7,985.61	8,026.69	7,982.81	17.58	19.15	92.32	-204.73	-436.29	375.35	338.73	36.62	10.251			
8,100.00	8,085.18	8,127.86	8,083.94	17.83	19.35	93.37	-208.95	-437.51	376.34	339.25	37.09	10.147			
8,200.00	8,184.75	8,228.67	8,184.75	18.08	19.55	94.67	-207.61	-437.88	377.14	339.59	37.55	10.043			
8,300.00	8,284.32	8,328.24	8,284.32	18.34	19.73	96.07	-207.61	-437.88	378.01	340.01	38.00	9.947			
8,400.00	8,383.89	8,426.47	8,382.56	18.59	19.92	97.44	-207.58	-437.88	379.11	340.66	38.45	9.860 SF			
8,500.00	8,483.47	8,500.00	8,455.83	18.84	20.02	99.21	-202.16	-437.88	383.53	344.72	38.81	9.881			
8,600.00	8,583.11	8,579.10	8,533.18	19.08	20.07	102.40	-185.91	-437.88	394.26	355.16	39.09	10.085			
8,700.00	8,682.82	8,650.00	8,600.03	19.31	20.07	106.19	-162.42	-437.88	412.76	373.46	39.30	10.503			
8,800.00	8,782.60	8,700.00	8,645.18	19.54	20.04	109.29	-140.97	-437.88	440.06	400.59	39.47	11.150			
8,900.00	8,882.43	8,761.74	8,698.08	19.76	19.98	113.36	-109.20	-437.88	476.23	436.65	39.58	12.032			
9,000.00	8,982.31	8,800.00	8,729.02	19.98	19.93	116.05	-86.71	-437.88	521.31	481.60	39.71	13.126			
9,100.00	9,082.22	8,850.00	8,767.08	20.20	19.86	119.50	-54.31	-437.88	573.92	534.11	39.81	14.418			
9,200.00	9,182.17	8,887.86	8,793.94	20.42	19.80	122.16	-27.64	-437.88	633.39	593.48	39.92	15.868			
9,300.00	9,282.14	8,920.30	8,815.51	20.62	19.75	124.44	-3.42	-437.88	698.51	658.48	40.03	17.448			
9,400.00	9,382.13	8,950.00	8,834.03	20.83	19.71	126.51	19.80	-437.88	768.31	728.15	40.16	19.133			
9,500.00	9,482.13	8,974.64	8,848.46	21.03	19.67	128.27	39.77	-437.88	841.95	801.66	40.29	20.898			
9,600.00	9,582.13	9,000.00	8,862.41	21.23	19.63	-36.57	60.95	-437.88	918.88	878.45	40.43	22.730			
9,700.00	9,682.13	9,017.75	8,871.60	21.43	19.61	-35.69	76.12	-437.88	998.72	958.14	40.59	24.607			
9,800.00	9,782.13	9,050.00	8,887.09	21.63	19.56	-34.13	104.41	-437.88	1,081.30	1,040.58	40.72	26.555			
9,900.00	9,882.13	9,050.00	8,887.09	21.83	19.56	-34.13	104.41	-437.88	1,165.42	1,124.50	40.93	28.477			
10,000.00	9,982.13	9,050.00	8,887.09	22.03	19.56	-34.13	104.41	-437.88	1,251.89	1,210.75	41.13	30.437			
10,100.00	10,082.13	9,079.79	8,899.96	22.23	19.52	-32.75	131.28	-437.89	1,339.15	1,297.88	41.27	32.447			
10,200.00	10,182.13	9,100.00	8,907.89	22.43	19.49	-31.86	149.86	-437.89	1,428.11	1,386.68	41.44	34.464			

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 312H (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:	312H (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		
10,300.00	10,282.13	9,100.00	8,907.89	22.63	19.49	-31.86	149.86	-437.89	1,518.01	1,476.37	41.65	36.451		
10,400.00	10,382.13	9,100.00	8,907.89	22.83	19.49	-31.86	149.86	-437.89	1,609.10	1,567.25	41.85	38.446		
10,500.00	10,482.13	9,121.64	8,915.65	23.04	19.46	-30.94	170.07	-437.89	1,700.65	1,658.64	42.02	40.475		
10,600.00	10,582.13	9,130.01	8,918.45	23.24	19.45	-30.59	177.96	-437.89	1,793.11	1,750.90	42.21	42.481		
10,700.00	10,682.13	9,150.00	8,924.65	23.44	19.43	-29.78	196.95	-437.89	1,886.36	1,843.98	42.38	44.508		
10,800.00	10,782.13	9,150.00	8,924.65	23.65	19.43	-29.78	196.95	-437.89	1,979.86	1,937.27	42.59	46.484		
10,900.00	10,882.13	9,150.00	8,924.65	23.85	19.43	-29.78	196.95	-437.89	2,073.97	2,031.17	42.80	48.456		
11,000.00	10,982.13	9,150.00	8,924.65	24.06	19.43	-29.78	196.95	-437.89	2,168.60	2,125.59	43.01	50.420		
11,100.00	11,082.13	9,150.00	8,924.65	24.26	19.43	-29.78	196.95	-437.89	2,263.70	2,220.48	43.22	52.375		
11,200.00	11,181.99	9,150.00	8,924.65	24.45	19.43	-21.98	196.95	-437.89	2,358.14	2,315.08	43.06	54.766		
11,300.00	11,279.85	9,177.99	8,932.22	24.57	19.40	-15.34	223.89	-437.89	2,446.42	2,404.34	42.08	58.138		
11,400.00	11,372.77	9,200.00	8,937.25	24.62	19.38	-11.95	245.32	-437.89	2,527.34	2,486.93	40.41	62.538		
11,500.00	11,457.92	9,200.00	8,937.25	24.63	19.38	-10.02	245.32	-437.89	2,598.33	2,560.16	38.17	68.074		
11,600.00	11,532.71	9,200.00	8,937.25	24.62	19.38	-8.78	245.32	-437.89	2,658.59	2,623.05	35.54	74.813		
11,700.00	11,594.87	9,250.00	8,945.57	24.62	19.36	-7.91	294.61	-437.89	2,706.37	2,673.52	32.84	82.407		
11,800.00	11,642.51	9,250.00	8,945.57	24.66	19.36	-7.42	294.61	-437.89	2,740.50	2,710.08	30.42	90.075		
11,900.00	11,674.19	9,250.00	8,945.57	24.79	19.36	-7.15	294.61	-437.89	2,761.39	2,732.65	28.74	96.092		
12,000.00	11,688.93	9,300.00	8,949.58	25.03	19.48	-7.06	344.43	-437.89	2,767.97	2,739.65	28.31	97.770		
12,100.00	11,690.00	9,300.00	8,949.58	25.38	19.48	-7.08	344.43	-437.89	2,763.44	2,734.90	28.54	96.823		
12,200.00	11,690.00	9,320.91	8,949.96	25.86	19.55	-7.08	365.34	-437.89	2,761.21	2,732.42	28.79	95.903		
12,244.61	11,690.00	9,340.42	8,949.96	26.12	19.64	-7.08	384.85	-437.89	2,761.10	2,732.15	28.95	95.375		
12,300.00	11,690.00	9,395.81	8,949.96	26.45	19.88	-7.08	440.24	-437.89	2,761.10	2,731.86	29.24	94.423		
12,400.00	11,690.00	9,495.81	8,949.96	27.14	20.43	-7.08	540.24	-437.89	2,761.10	2,731.26	29.83	92.549		
12,500.00	11,690.00	9,595.81	8,949.96	27.94	21.11	-7.08	640.24	-437.90	2,761.10	2,730.60	30.49	90.548		
12,600.00	11,690.00	9,695.81	8,949.96	28.84	21.92	-7.08	740.24	-437.90	2,761.09	2,729.88	31.21	88.455		
12,700.00	11,690.00	9,795.81	8,949.96	29.82	22.83	-7.08	840.24	-437.90	2,761.09	2,729.10	31.99	86.302		
12,800.00	11,690.00	9,895.81	8,949.96	30.87	23.85	-7.08	940.24	-437.90	2,761.09	2,728.27	32.83	84.115		
12,900.00	11,690.00	9,995.81	8,949.96	32.00	24.96	-7.08	1,040.24	-437.91	2,761.09	2,727.39	33.71	81.918		
13,000.00	11,690.00	10,095.81	8,949.97	33.18	26.14	-7.08	1,140.24	-437.91	2,761.09	2,726.46	34.63	79.731		
13,100.00	11,690.00	10,195.81	8,949.97	34.43	27.40	-7.08	1,240.24	-437.91	2,761.09	2,725.49	35.60	77.568		
13,200.00	11,690.00	10,295.81	8,949.97	35.72	28.71	-7.08	1,340.24	-437.91	2,761.09	2,724.49	36.60	75.443		
13,300.00	11,690.00	10,395.81	8,949.97	37.06	30.08	-7.08	1,440.24	-437.92	2,761.09	2,723.45	37.64	73.364		
13,400.00	11,690.00	10,495.81	8,949.97	38.44	31.50	-7.08	1,540.24	-437.92	2,761.09	2,722.38	38.70	71.338		
13,500.00	11,690.00	10,595.81	8,949.97	39.85	32.95	-7.08	1,640.24	-437.92	2,761.08	2,721.28	39.80	69.371		
13,600.00	11,690.00	10,695.81	8,949.97	41.30	34.44	-7.08	1,740.24	-437.92	2,761.08	2,720.16	40.93	67.466		
13,700.00	11,690.00	10,795.81	8,949.97	42.78	35.96	-7.08	1,840.24	-437.92	2,761.08	2,719.01	42.07	65.625		
13,800.00	11,690.00	10,895.81	8,949.97	44.28	37.51	-7.08	1,940.24	-437.93	2,761.08	2,717.84	43.24	63.849		
13,900.00	11,690.00	10,995.81	8,949.98	45.80	39.08	-7.08	2,040.24	-437.93	2,761.08	2,716.64	44.44	62.137		
14,000.00	11,690.00	11,095.81	8,949.98	47.35	40.68	-7.08	2,140.24	-437.93	2,761.08	2,715.43	45.65	60.489		
14,100.00	11,690.00	11,195.81	8,949.98	48.92	42.29	-7.08	2,240.24	-437.93	2,761.08	2,714.20	46.87	58.904		
14,200.00	11,690.00	11,295.81	8,949.98	50.50	43.92	-7.08	2,340.24	-437.94	2,761.08	2,712.96	48.12	57.381		
14,300.00	11,690.00	11,395.81	8,949.98	52.10	45.56	-7.08	2,440.24	-437.94	2,761.07	2,711.70	49.38	55.918		
14,400.00	11,690.00	11,495.81	8,949.98	53.72	47.22	-7.08	2,540.24	-437.94	2,761.07	2,710.42	50.65	54.512		
14,500.00	11,690.00	11,595.81	8,949.98	55.35	48.89	-7.08	2,640.24	-437.94	2,761.07	2,709.14	51.94	53.162		
14,600.00	11,690.00	11,695.81	8,949.98	56.98	50.57	-7.08	2,740.24	-437.95	2,761.07	2,707.84	53.24	51.865		
14,700.00	11,690.00	11,795.81	8,949.98	58.64	52.26	-7.08	2,840.24	-437.95	2,761.07	2,706.52	54.55	50.620		
14,800.00	11,690.00	11,895.81	8,949.98	60.30	53.95	-7.08	2,940.24	-437.95	2,761.07	2,705.20	55.87	49.424		
14,900.00	11,690.00	11,995.81	8,949.99	61.97	55.66	-7.08	3,040.24	-437.95	2,761.07	2,703.87	57.20	48.274		
15,000.00	11,690.00	12,095.81	8,949.99	63.65	57.38	-7.08	3,140.24	-437.95	2,761.07	2,702.53	58.53	47.170		
15,100.00	11,690.00	12,195.81	8,949.99	65.33	59.10	-7.08	3,240.24	-437.96	2,761.07	2,701.18	59.88	46.109		
15,200.00	11,690.00	12,295.81	8,949.99	67.03	60.82	-7.08	3,340.24	-437.96	2,761.06	2,699.83	61.24	45.088		
15,300.00	11,690.00	12,395.81	8,949.99	68.73	62.56	-7.08	3,440.24	-437.96	2,761.06	2,698.46	62.60	44.106		

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 312H (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:	312H (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		
15,400.00	11,690.00	12,495.81	8,949.99	70.44	64.29	-7.08	3,540.24	-437.96	2,761.06	2,697.09	63.97	43.162		
15,500.00	11,690.00	12,595.81	8,949.99	72.15	66.04	-7.08	3,640.24	-437.97	2,761.06	2,695.71	65.35	42.253		
15,600.00	11,690.00	12,695.81	8,949.99	73.87	67.78	-7.08	3,740.24	-437.97	2,761.06	2,694.33	66.73	41.377		
15,700.00	11,690.00	12,795.81	8,949.99	75.59	69.54	-7.08	3,840.24	-437.97	2,761.06	2,692.94	68.12	40.534		
15,800.00	11,690.00	12,895.81	8,949.99	77.32	71.29	-7.08	3,940.24	-437.97	2,761.06	2,691.55	69.51	39.721		
15,900.00	11,690.00	12,995.81	8,950.00	79.05	73.05	-7.08	4,040.24	-437.97	2,761.06	2,690.14	70.91	38.937		
16,000.00	11,690.00	13,095.81	8,950.00	80.79	74.81	-7.08	4,140.24	-437.98	2,761.05	2,688.74	72.32	38.181		
16,100.00	11,690.00	13,195.81	8,950.00	82.53	76.58	-7.08	4,240.24	-437.98	2,761.05	2,687.33	73.72	37.451		
16,200.00	11,690.00	13,295.81	8,950.00	84.28	78.34	-7.08	4,340.24	-437.98	2,761.05	2,685.92	75.14	36.747		
16,300.00	11,690.00	13,395.81	8,950.00	86.02	80.12	-7.08	4,440.24	-437.98	2,761.05	2,684.50	76.55	36.067		
16,344.18	11,690.00	13,439.99	8,950.00	86.80	80.90	-7.08	4,484.42	-437.99	2,761.05	2,683.87	77.18	35.773		
16,357.86	11,690.00	13,452.65	8,950.00	87.04	81.12	-7.08	4,497.08	-437.99	2,761.05	2,683.68	77.37	35.687		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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	-40.85	209.02	-180.73	276.32						
100.00	100.00	100.00	100.00	0.08	0.08	-40.85	209.02	-180.73	276.32	276.17	0.16	1,756.253			
200.00	200.00	200.00	200.00	0.30	0.30	-40.85	209.02	-180.73	276.32	275.72	0.61	455.325			
300.00	300.00	300.00	300.00	0.53	0.53	-40.85	209.02	-180.73	276.32	275.27	1.06	261.570			
400.00	400.00	400.00	400.00	0.75	0.75	-40.85	209.02	-180.73	276.32	274.82	1.51	183.489			
500.00	500.00	500.00	500.00	0.98	0.98	-40.85	209.02	-180.73	276.32	274.37	1.96	141.308			
600.00	600.00	600.00	600.00	1.20	1.20	-40.85	209.02	-180.73	276.32	273.92	2.40	114.895			
700.00	700.00	700.00	700.00	1.43	1.43	-40.85	209.02	-180.73	276.32	273.47	2.85	96.801			
800.00	800.00	800.00	800.00	1.65	1.65	-40.85	209.02	-180.73	276.32	273.02	3.30	83.631			
900.00	900.00	900.00	900.00	1.88	1.88	-40.85	209.02	-180.73	276.32	272.57	3.75	73.615			
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-40.85	209.02	-180.73	276.32	272.12	4.20	65.742			
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-40.85	209.02	-180.73	276.32	271.67	4.65	59.390			
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-40.85	209.02	-180.73	276.32	271.22	5.10	54.158			
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-40.85	209.02	-180.73	276.32	270.77	5.55	49.772			
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-40.85	209.02	-180.73	276.32	270.32	6.00	46.044			
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-40.85	209.02	-180.73	276.32	269.87	6.45	42.835			
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-40.85	209.02	-180.73	276.32	269.42	6.90	40.045			
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-40.85	209.02	-180.73	276.32	268.97	7.35	37.596			
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-40.85	209.02	-180.73	276.32	268.52	7.80	35.429			
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-40.85	209.02	-180.73	276.32	268.07	8.25	33.498			
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-40.85	209.02	-180.73	276.32	267.62	8.70	31.767			
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-40.85	209.02	-180.73	276.32	267.17	9.15	30.206			
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-40.85	209.02	-180.73	276.32	266.73	9.60	28.791			
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-40.85	209.02	-180.73	276.32	266.28	10.05	27.503			
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-40.85	209.02	-180.73	276.32	265.83	10.50	26.325			
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-40.85	209.02	-180.73	276.32	265.38	10.95	25.244			
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-40.85	209.02	-180.73	276.32	264.93	11.40	24.248			
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-40.85	209.02	-180.73	276.32	264.48	11.85	23.328			
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-40.85	209.02	-180.73	276.32	264.03	12.29	22.475			
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-40.85	209.02	-180.73	276.32	263.58	12.74	21.682			
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-40.85	209.02	-180.73	276.32	263.13	13.19	20.943			
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-40.85	209.02	-180.73	276.32	262.68	13.64	20.253			
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-40.85	209.02	-180.73	276.32	262.23	14.09	19.607			
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-40.85	209.02	-180.73	276.32	261.78	14.54	19.001			
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-40.85	209.02	-180.73	276.32	261.33	14.99	18.431			
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-40.85	209.02	-180.73	276.32	260.88	15.44	17.895			
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-40.85	209.02	-180.73	276.32	260.43	15.89	17.389			
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-40.85	209.02	-180.73	276.32	259.98	16.34	16.910			
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-40.85	209.02	-180.73	276.32	259.53	16.79	16.458			
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-40.85	209.02	-180.73	276.32	259.08	17.24	16.028			
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-40.85	209.02	-180.73	276.32	258.63	17.69	15.621			
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-40.85	209.02	-180.73	276.32	258.18	18.14	15.234			
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-40.85	209.02	-180.73	276.32	257.73	18.59	14.866			
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-40.85	209.02	-180.73	276.32	257.28	19.04	14.515			
4,400.00	4,400.00	4,404.55	4,404.55	9.71	9.73	125.62	208.63	-179.86	276.00	256.56	19.45	14.194			
4,500.00	4,499.96	4,509.03	4,508.98	9.88	9.93	126.35	207.46	-177.25	275.07	255.27	19.80	13.890			
4,600.00	4,599.86	4,613.33	4,613.17	10.05	10.12	127.56	205.52	-172.92	273.62	253.45	20.16	13.569			
4,700.00	4,699.68	4,717.39	4,717.02	10.23	10.32	129.28	202.82	-166.86	271.78	251.25	20.53	13.240			
4,800.00	4,799.37	4,821.11	4,820.39	10.40	10.53	131.50	199.35	-159.12	269.75	248.86	20.89	12.913			
4,900.00	4,898.94	4,924.46	4,923.22	10.58	10.74	134.16	195.14	-149.70	267.53	246.27	21.26	12.581			
5,000.00	4,998.51	5,027.45	5,025.50	10.77	10.95	137.10	190.19	-138.64	264.49	242.83	21.65	12.216			
5,100.00	5,098.08	5,129.79	5,126.89	10.96	11.18	140.34	184.53	-125.98	260.73	238.69	22.04	11.828			

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 312H (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:	312H (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	5,197.65	5,228.57	5,224.66	11.15	11.40	143.66	178.76	-113.08	257.23	234.80	22.44	11.464		
5,300.00	5,297.22	5,327.36	5,322.43	11.34	11.63	147.05	172.99	-100.17	254.64	231.80	22.84	11.148		
5,400.00	5,396.79	5,426.14	5,420.19	11.55	11.86	150.50	167.21	-87.26	252.98	229.72	23.25	10.880		
5,500.00	5,496.36	5,524.92	5,517.96	11.75	12.10	153.98	161.44	-74.36	252.26	228.59	23.67	10.657		
5,524.46	5,520.72	5,549.09	5,541.87	11.80	12.16	154.84	160.03	-71.20	252.23	228.46	23.78	10.609 CC		
5,600.00	5,595.93	5,623.70	5,615.72	11.96	12.34	157.47	155.67	-61.45	252.51	228.41	24.10	10.478 ES		
5,700.00	5,695.50	5,722.49	5,713.49	12.17	12.59	160.94	149.89	-48.54	253.71	229.17	24.54	10.340		
5,800.00	5,795.07	5,821.27	5,811.25	12.38	12.84	164.37	144.12	-35.64	255.85	230.87	24.98	10.242		
5,900.00	5,894.64	5,920.05	5,909.02	12.59	13.10	167.73	138.35	-22.73	258.91	233.48	25.43	10.180		
6,000.00	5,994.21	6,018.83	6,006.78	12.81	13.36	171.00	132.58	-9.82	262.86	236.97	25.89	10.152 SF		
6,100.00	6,093.78	6,117.62	6,104.55	13.03	13.62	174.16	126.80	3.08	267.65	241.30	26.36	10.155		
6,200.00	6,193.35	6,216.40	6,202.31	13.26	13.89	177.21	121.03	15.99	273.25	246.43	26.83	10.186		
6,300.00	6,292.92	6,315.18	6,300.08	13.48	14.16	-179.87	115.26	28.89	279.60	252.30	27.30	10.241		
6,400.00	6,392.49	6,413.96	6,397.84	13.71	14.44	-177.08	109.49	41.80	286.66	258.88	27.78	10.319		
6,500.00	6,492.06	6,512.75	6,495.61	13.94	14.71	-174.44	103.71	54.71	294.37	266.11	28.26	10.415		
6,600.00	6,591.63	6,611.53	6,593.38	14.17	14.99	-171.93	97.94	67.61	302.69	273.94	28.75	10.528		
6,700.00	6,691.20	6,710.31	6,691.14	14.41	15.27	-169.55	92.17	80.52	311.56	282.32	29.24	10.655		
6,800.00	6,790.77	6,809.09	6,788.91	14.64	15.56	-167.31	86.40	93.43	320.94	291.20	29.73	10.794		
6,900.00	6,890.34	6,907.88	6,886.67	14.88	15.84	-165.20	80.62	106.33	330.78	300.55	30.23	10.943		
7,000.00	6,989.91	7,006.66	6,984.44	15.12	16.13	-163.21	74.85	119.24	341.05	310.33	30.73	11.100		
7,100.00	7,089.48	7,105.44	7,082.20	15.36	16.42	-161.33	69.08	132.15	351.71	320.49	31.22	11.264		
7,200.00	7,189.05	7,204.22	7,179.97	15.60	16.72	-159.57	63.30	145.05	362.73	331.00	31.72	11.433		
7,300.00	7,288.62	7,303.01	7,277.73	15.84	17.01	-157.91	57.53	157.96	374.06	341.84	32.23	11.607		
7,400.00	7,388.19	7,402.08	7,375.79	16.09	17.30	-156.35	51.75	170.88	385.69	352.96	32.73	11.785		
7,500.00	7,487.76	7,502.67	7,475.51	16.33	17.56	-155.03	46.37	182.92	397.28	364.09	33.19	11.969		
7,600.00	7,587.33	7,603.63	7,575.82	16.58	17.81	-154.01	41.68	193.39	408.60	374.95	33.65	12.142		
7,700.00	7,686.90	7,704.91	7,676.63	16.83	18.05	-153.29	37.71	202.28	419.54	385.43	34.11	12.301		
7,800.00	7,786.47	7,806.44	7,777.84	17.08	18.28	-152.83	34.45	209.56	430.03	395.47	34.55	12.445		
7,900.00	7,886.04	7,906.17	7,879.38	17.33	18.50	-152.62	31.93	215.20	440.03	405.03	34.99	12.574		
8,000.00	7,985.61	8,010.02	7,981.14	17.58	18.71	-152.64	30.14	219.21	449.51	414.08	35.43	12.689		
8,100.00	8,085.18	8,111.94	8,083.02	17.83	18.91	-152.87	29.08	221.56	458.48	422.63	35.85	12.789		
8,200.00	8,184.75	8,213.67	8,184.75	18.08	19.10	-153.31	28.77	222.27	466.97	430.71	36.26	12.878		
8,300.00	8,284.32	8,313.24	8,284.32	18.34	19.29	-153.81	28.77	222.27	475.27	438.60	36.67	12.959		
8,400.00	8,383.89	8,405.92	8,377.00	18.59	19.47	-154.26	28.77	222.27	483.66	446.57	37.08	13.042		
8,500.00	8,483.47	8,469.49	8,440.44	18.84	19.59	-154.83	32.29	222.27	496.51	459.08	37.43	13.266		
8,600.00	8,583.11	8,526.63	8,496.81	19.08	19.69	-155.76	41.44	222.26	516.78	479.03	37.75	13.691		
8,700.00	8,682.82	8,580.71	8,549.09	19.31	19.76	-156.94	55.22	222.26	544.18	506.13	38.04	14.305		
8,800.00	8,782.60	8,631.23	8,596.55	19.54	19.82	-158.25	72.50	222.26	578.47	540.15	38.31	15.098		
8,900.00	8,882.43	8,677.94	8,638.92	19.76	19.87	-159.60	92.14	222.26	619.28	580.71	38.57	16.056		
9,000.00	8,982.31	8,720.82	8,676.28	19.98	19.92	-160.92	113.15	222.26	666.14	627.32	38.81	17.163		
9,100.00	9,082.22	8,750.00	8,700.77	20.20	19.94	-161.88	129.02	222.26	718.63	679.58	39.05	18.405		
9,200.00	9,182.17	8,800.00	8,740.73	20.42	19.98	-163.48	159.03	222.26	775.75	736.48	39.27	19.752		
9,300.00	9,282.14	8,828.12	8,762.02	20.62	20.01	-164.42	177.41	222.26	837.29	797.80	39.49	21.202		
9,400.00	9,382.13	8,850.00	8,777.93	20.83	20.02	-165.18	192.42	222.26	902.72	863.01	39.71	22.734		
9,500.00	9,482.13	8,900.00	8,812.08	21.03	20.07	-166.72	228.92	222.25	971.60	931.68	39.92	24.339		
9,600.00	9,582.13	8,900.00	8,812.08	21.23	20.07	27.03	228.92	222.25	1,043.09	1,002.96	40.12	25.996		
9,700.00	9,682.13	8,931.45	8,831.88	21.43	20.09	26.15	253.35	222.25	1,117.68	1,077.36	40.32	27.721		
9,800.00	9,782.13	8,950.00	8,842.92	21.63	20.11	25.64	268.26	222.25	1,195.00	1,154.46	40.54	29.475		
9,900.00	9,882.13	8,970.05	8,854.30	21.83	20.13	25.10	284.76	222.25	1,274.60	1,233.84	40.76	31.271		
10,000.00	9,982.13	9,000.00	8,870.21	22.03	20.17	24.31	310.13	222.25	1,356.40	1,315.44	40.96	33.116		
10,100.00	10,082.13	9,000.00	8,870.21	22.23	20.17	24.31	310.13	222.25	1,439.52	1,398.35	41.17	34.965		
10,200.00	10,182.13	9,000.00	8,870.21	22.43	20.17	24.31	310.13	222.25	1,524.66	1,483.28	41.38	36.843		

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 312H (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:	312H (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	10,282.13	9,029.08	8,884.37	22.63	20.21	23.56	335.53	222.25	1,610.53	1,568.94	41.59	38.723		
10,400.00	10,382.13	9,050.00	8,893.75	22.83	20.25	23.03	354.23	222.25	1,697.98	1,656.18	41.80	40.624		
10,500.00	10,482.13	9,050.00	8,893.75	23.04	20.25	23.03	354.23	222.25	1,786.28	1,744.27	42.01	42.520		
10,600.00	10,582.13	9,050.00	8,893.75	23.24	20.25	23.03	354.23	222.25	1,875.76	1,833.54	42.22	44.425		
10,700.00	10,682.13	9,071.50	8,902.67	23.44	20.29	22.51	373.79	222.25	1,965.74	1,923.31	42.43	46.327		
10,800.00	10,782.13	9,080.25	8,906.09	23.65	20.31	22.30	381.85	222.24	2,056.62	2,013.97	42.64	48.228		
10,900.00	10,882.13	9,100.00	8,913.35	23.85	20.35	21.83	400.21	222.24	2,148.30	2,105.45	42.85	50.135		
11,000.00	10,982.13	9,100.00	8,913.35	24.06	20.35	21.83	400.21	222.24	2,240.30	2,197.24	43.06	52.023		
11,100.00	11,082.13	9,100.00	8,913.35	24.26	20.35	21.83	400.21	222.24	2,332.96	2,289.68	43.28	53.906		
11,200.00	11,181.99	9,100.00	8,913.35	24.45	20.35	16.99	400.21	222.24	2,424.86	2,381.48	43.38	55.902		
11,300.00	11,279.85	9,100.00	8,913.35	24.57	20.35	12.73	400.21	222.24	2,510.44	2,467.77	42.67	58.839		
11,400.00	11,372.77	9,150.00	8,928.87	24.62	20.50	10.11	447.72	222.24	2,586.81	2,545.68	41.13	62.890		
11,500.00	11,457.92	9,150.00	8,928.87	24.63	20.50	8.68	447.72	222.24	2,652.50	2,613.59	38.92	68.154		
11,600.00	11,532.71	9,150.00	8,928.87	24.62	20.50	7.76	447.72	222.24	2,706.84	2,670.61	36.24	74.695		
11,700.00	11,594.87	9,175.95	8,935.28	24.62	20.60	7.13	472.87	222.24	2,748.19	2,714.78	33.41	82.247		
11,800.00	11,642.51	9,200.00	8,940.19	24.66	20.70	6.76	496.41	222.24	2,776.13	2,745.30	30.83	90.054		
11,900.00	11,674.19	9,200.00	8,940.19	24.79	20.70	6.60	496.41	222.24	2,789.97	2,761.08	28.89	96.582		
12,000.00	11,688.93	9,226.60	8,944.48	25.03	20.83	6.60	522.66	222.24	2,789.36	2,761.21	28.16	99.065		
12,100.00	11,690.00	9,250.00	8,947.23	25.38	20.95	6.65	545.89	222.24	2,778.21	2,749.84	28.37	97.914		
12,200.00	11,690.00	9,250.00	8,947.23	25.86	20.95	6.65	545.89	222.24	2,768.99	2,740.43	28.56	96.959		
12,300.00	11,690.00	9,278.02	8,949.28	26.45	21.11	6.65	573.83	222.23	2,762.54	2,733.69	28.85	95.750		
12,400.00	11,690.00	9,300.00	8,949.93	27.14	21.25	6.66	595.81	222.23	2,759.23	2,730.07	29.16	94.635		
12,480.69	11,690.00	9,325.15	8,949.96	27.79	21.41	6.66	620.95	222.23	2,758.64	2,729.18	29.45	93.666		
12,500.00	11,690.00	9,344.46	8,949.96	27.94	21.54	6.66	640.27	222.23	2,758.64	2,729.07	29.56	93.310		
12,600.00	11,690.00	9,444.46	8,949.96	28.84	22.30	6.66	740.27	222.22	2,758.63	2,728.44	30.19	91.374		
12,700.00	11,690.00	9,544.46	8,949.96	29.82	23.19	6.66	840.27	222.22	2,758.63	2,727.75	30.88	89.329		
12,800.00	11,690.00	9,644.46	8,949.96	30.87	24.18	6.66	940.27	222.21	2,758.63	2,727.00	31.63	87.205		
12,900.00	11,690.00	9,744.46	8,949.96	32.00	25.26	6.66	1,040.27	222.21	2,758.63	2,726.19	32.44	85.033		
13,000.00	11,690.00	9,844.46	8,949.96	33.18	26.43	6.66	1,140.27	222.20	2,758.63	2,725.33	33.30	82.839		
13,100.00	11,690.00	9,944.46	8,949.96	34.43	27.66	6.66	1,240.27	222.20	2,758.63	2,724.42	34.21	80.644		
13,200.00	11,690.00	10,044.46	8,949.97	35.72	28.96	6.66	1,340.27	222.19	2,758.63	2,723.47	35.16	78.467		
13,300.00	11,690.00	10,144.46	8,949.97	37.06	30.31	6.66	1,440.27	222.18	2,758.63	2,722.48	36.14	76.321		
13,400.00	11,690.00	10,244.46	8,949.97	38.44	31.71	6.66	1,540.27	222.18	2,758.62	2,721.46	37.17	74.218		
13,500.00	11,690.00	10,344.46	8,949.97	39.85	33.15	6.66	1,640.27	222.17	2,758.62	2,720.40	38.23	72.165		
13,600.00	11,690.00	10,444.46	8,949.97	41.30	34.63	6.66	1,740.27	222.17	2,758.62	2,719.31	39.31	70.170		
13,700.00	11,690.00	10,544.46	8,949.97	42.78	36.13	6.66	1,840.27	222.16	2,758.62	2,718.19	40.43	68.235		
13,800.00	11,690.00	10,644.46	8,949.97	44.28	37.67	6.66	1,940.27	222.15	2,758.62	2,717.05	41.57	66.364		
13,900.00	11,690.00	10,744.46	8,949.97	45.80	39.23	6.66	2,040.27	222.15	2,758.62	2,715.89	42.73	64.558		
14,000.00	11,690.00	10,844.46	8,949.97	47.35	40.81	6.66	2,140.27	222.14	2,758.62	2,714.70	43.91	62.817		
14,100.00	11,690.00	10,944.46	8,949.98	48.92	42.42	6.66	2,240.27	222.14	2,758.62	2,713.50	45.12	61.142		
14,200.00	11,690.00	11,044.46	8,949.98	50.50	44.04	6.66	2,340.27	222.13	2,758.61	2,712.27	46.34	59.530		
14,300.00	11,690.00	11,144.46	8,949.98	52.10	45.67	6.66	2,440.27	222.13	2,758.61	2,711.03	47.58	57.980		
14,400.00	11,690.00	11,244.46	8,949.98	53.72	47.32	6.66	2,540.27	222.12	2,758.61	2,709.78	48.83	56.492		
14,500.00	11,690.00	11,344.46	8,949.98	55.35	48.98	6.66	2,640.27	222.11	2,758.61	2,708.51	50.10	55.062		
14,600.00	11,690.00	11,444.46	8,949.98	56.98	50.66	6.66	2,740.27	222.11	2,758.61	2,707.23	51.38	53.690		
14,700.00	11,690.00	11,544.46	8,949.98	58.64	52.34	6.66	2,840.27	222.10	2,758.61	2,705.93	52.67	52.372		
14,800.00	11,690.00	11,644.46	8,949.98	60.30	54.03	6.66	2,940.27	222.10	2,758.61	2,704.63	53.98	51.106		
14,900.00	11,690.00	11,744.46	8,949.98	61.97	55.74	6.66	3,040.27	222.09	2,758.61	2,703.31	55.29	49.890		
15,000.00	11,690.00	11,844.46	8,949.99	63.65	57.44	6.66	3,140.27	222.08	2,758.60	2,701.99	56.62	48.723		
15,100.00	11,690.00	11,944.46	8,949.99	65.33	59.16	6.66	3,240.27	222.08	2,758.60	2,700.65	57.95	47.601		
15,200.00	11,690.00	12,044.46	8,949.99	67.03	60.88	6.66	3,340.27	222.07	2,758.60	2,699.31	59.29	46.524		
15,300.00	11,690.00	12,144.46	8,949.99	68.73	62.61	6.66	3,440.27	222.07	2,758.60	2,697.96	60.65	45.488		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 320H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,400.00	11,690.00	12,244.46	8,949.99	70.44	64.35	6.66	3,540.27	222.06	2,758.60	2,696.60	62.00	44.491		
15,500.00	11,690.00	12,344.46	8,949.99	72.15	66.08	6.66	3,640.27	222.06	2,758.60	2,695.23	63.37	43.533		
15,600.00	11,690.00	12,444.46	8,949.99	73.87	67.83	6.66	3,740.27	222.05	2,758.60	2,693.86	64.74	42.610		
15,700.00	11,690.00	12,544.46	8,949.99	75.59	69.58	6.66	3,840.27	222.04	2,758.60	2,692.48	66.12	41.722		
15,800.00	11,690.00	12,644.46	8,949.99	77.32	71.33	6.66	3,940.27	222.04	2,758.59	2,691.09	67.50	40.867		
15,900.00	11,690.00	12,744.46	8,950.00	79.05	73.08	6.66	4,040.27	222.03	2,758.59	2,689.70	68.89	40.043		
16,000.00	11,690.00	12,844.46	8,950.00	80.79	74.84	6.66	4,140.27	222.03	2,758.59	2,688.31	70.29	39.249		
16,100.00	11,690.00	12,944.46	8,950.00	82.53	76.60	6.66	4,240.27	222.02	2,758.59	2,686.91	71.68	38.483		
16,200.00	11,690.00	13,044.46	8,950.00	84.28	78.37	6.66	4,340.27	222.02	2,758.59	2,685.50	73.09	37.743		
16,300.00	11,690.00	13,144.46	8,950.00	86.02	80.14	6.66	4,440.27	222.01	2,758.59	2,684.09	74.50	37.030		
16,357.86	11,690.00	13,202.32	8,950.00	87.04	81.16	6.66	4,498.13	222.01	2,758.59	2,683.28	75.31	36.628		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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			
0.00	0.00	0.00	0.00	0.00	0.00	-0.18	74.98	-0.23	74.98						
100.00	100.00	100.00	100.00	0.08	0.08	-0.18	74.98	-0.23	74.98	74.82	0.16	476.561			
200.00	200.00	200.00	200.00	0.30	0.30	-0.18	74.98	-0.23	74.98	74.37	0.61	123.553			
300.00	300.00	300.00	300.00	0.53	0.53	-0.18	74.98	-0.23	74.98	73.92	1.06	70.977			
400.00	400.00	400.00	400.00	0.75	0.75	-0.18	74.98	-0.23	74.98	73.47	1.51	49.790			
500.00	500.00	500.00	500.00	0.98	0.98	-0.18	74.98	-0.23	74.98	73.02	1.96	38.344			
600.00	600.00	600.00	600.00	1.20	1.20	-0.18	74.98	-0.23	74.98	72.58	2.40	31.177			
700.00	700.00	700.00	700.00	1.43	1.43	-0.18	74.98	-0.23	74.98	72.13	2.85	26.267			
800.00	800.00	800.00	800.00	1.65	1.65	-0.18	74.98	-0.23	74.98	71.68	3.30	22.693			
900.00	900.00	900.00	900.00	1.88	1.88	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	74.98	-0.23	74.98	55.94	19.04	3.939 CC, ES			
4,400.00	4,400.00	4,400.39	4,400.39	9.71	9.73	166.85	74.71	0.61	75.56	56.13	19.44	3.887 SF			
4,500.00	4,499.96	4,500.70	4,500.66	9.88	9.92	169.15	73.90	3.12	77.40	57.61	19.79	3.911			
4,600.00	4,599.86	4,600.83	4,600.70	10.05	10.11	172.74	72.56	7.29	80.71	60.58	20.14	4.008			
4,700.00	4,699.68	4,700.71	4,700.39	10.23	10.30	177.26	70.89	13.10	85.83	65.35	20.48	4.190			
4,800.00	4,799.37	4,800.26	4,799.62	10.40	10.50	-177.71	68.29	20.55	93.10	72.27	20.83	4.470			
4,900.00	4,898.94	4,899.41	4,898.32	10.58	10.70	-172.57	65.38	29.59	102.38	81.18	21.20	4.830			
5,000.00	4,998.51	4,998.23	4,996.50	10.77	10.91	-167.46	61.96	40.22	112.67	91.09	21.58	5.220			
5,100.00	5,098.08	5,096.65	5,094.08	10.96	11.12	-162.48	58.04	52.40	124.09	102.11	21.98	5.646			

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 312H (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:	312H (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		
5,200.00	5,197.65	5,194.62	5,190.99	11.15	11.35	-157.70	53.62	66.12	136.81	114.43	22.38	6.112		
5,300.00	5,297.22	5,292.09	5,287.14	11.34	11.58	-153.17	48.73	81.33	150.98	128.18	22.79	6.623		
5,400.00	5,396.79	5,389.01	5,382.46	11.55	11.82	-148.93	43.36	97.99	166.68	143.46	23.21	7.180		
5,500.00	5,496.36	5,485.32	5,476.88	11.75	12.07	-145.00	37.54	116.06	183.99	160.35	23.64	7.782		
5,600.00	5,595.93	5,580.98	5,570.33	11.96	12.34	-141.38	31.28	135.51	202.95	178.87	24.08	8.429		
5,700.00	5,695.50	5,677.60	5,664.47	12.17	12.62	-138.10	24.61	156.25	223.32	198.80	24.52	9.108		
5,800.00	5,795.07	5,774.75	5,759.10	12.38	12.92	-135.34	17.88	177.15	244.32	219.35	24.97	9.786		
5,900.00	5,894.64	5,871.89	5,853.72	12.59	13.23	-133.02	11.15	198.05	265.79	240.37	25.42	10.456		
6,000.00	5,994.21	5,969.03	5,948.35	12.81	13.54	-131.05	4.42	218.96	287.61	261.73	25.88	11.114		
6,100.00	6,093.78	6,066.17	6,042.98	13.03	13.86	-129.35	-2.31	239.86	309.72	283.38	26.34	11.759		
6,200.00	6,193.35	6,163.31	6,137.61	13.26	14.20	-127.88	-9.03	260.76	332.05	305.24	26.80	12.388		
6,300.00	6,292.92	6,260.45	6,232.23	13.48	14.53	-126.59	-15.76	281.66	354.56	327.29	27.27	13.000		
6,400.00	6,392.49	6,357.59	6,326.86	13.71	14.88	-125.46	-22.49	302.57	377.23	349.48	27.75	13.595		
6,500.00	6,492.06	6,454.73	6,421.49	13.94	15.23	-124.45	-29.22	323.47	400.01	371.79	28.23	14.172		
6,600.00	6,591.63	6,551.88	6,516.11	14.17	15.59	-123.56	-35.95	344.37	422.91	394.20	28.71	14.732		
6,700.00	6,691.20	6,649.02	6,610.74	14.41	15.95	-122.75	-42.88	365.27	445.89	416.70	29.19	15.275		
6,800.00	6,790.77	6,746.16	6,705.37	14.64	16.32	-122.03	-49.41	386.18	468.95	439.27	29.68	15.801		
6,900.00	6,890.34	6,843.30	6,799.99	14.88	16.70	-121.37	-56.14	407.08	492.07	461.90	30.17	16.310		
7,000.00	6,989.91	6,940.44	6,894.62	15.12	17.07	-120.77	-62.86	427.98	515.25	484.58	30.66	16.803		
7,100.00	7,089.48	7,037.58	6,989.25	15.36	17.46	-120.22	-69.59	448.88	538.48	507.31	31.16	17.280		
7,200.00	7,189.05	7,134.72	7,083.88	15.60	17.84	-119.72	-76.32	469.78	561.75	530.08	31.66	17.742		
7,300.00	7,288.62	7,231.87	7,178.50	15.84	18.23	-119.26	-83.05	490.69	585.05	552.89	32.16	18.190		
7,400.00	7,388.19	7,329.01	7,273.13	16.09	18.63	-118.83	-89.78	511.59	608.39	575.73	32.67	18.623		
7,500.00	7,487.76	7,426.15	7,367.76	16.33	19.02	-118.43	-96.51	532.49	631.77	598.59	33.18	19.042		
7,600.00	7,587.33	7,523.29	7,462.38	16.58	19.42	-118.06	-103.24	553.39	655.16	621.47	33.69	19.448		
7,700.00	7,686.90	7,620.43	7,557.01	16.83	19.83	-117.72	-109.96	574.30	678.58	644.38	34.20	19.841		
7,800.00	7,786.47	7,717.57	7,651.64	17.08	20.23	-117.40	-116.69	595.20	702.03	667.31	34.72	20.222		
7,900.00	7,886.04	7,814.71	7,746.26	17.33	20.64	-117.10	-123.42	616.10	725.49	690.26	35.23	20.591		
8,000.00	7,985.61	7,911.86	7,840.89	17.58	21.05	-116.82	-130.15	637.00	748.97	713.22	35.75	20.949		
8,100.00	8,085.18	8,009.00	7,935.52	17.83	21.46	-116.56	-136.88	657.91	772.46	736.19	36.27	21.296		
8,200.00	8,184.75	8,106.14	8,030.15	18.08	21.88	-116.31	-143.61	678.81	795.97	759.18	36.80	21.632		
8,300.00	8,284.32	8,203.28	8,124.77	18.34	22.29	-116.08	-150.34	699.71	819.49	782.17	37.32	21.958		
8,400.00	8,383.89	8,300.42	8,219.40	18.59	22.71	-115.86	-157.06	720.61	843.03	805.18	37.85	22.274		
8,500.00	8,483.47	8,397.57	8,314.03	18.84	23.13	-115.70	-163.79	741.52	866.54	828.16	38.38	22.578		
8,600.00	8,583.11	8,480.01	8,394.41	19.08	23.47	-115.71	-167.84	759.27	890.23	851.38	38.85	22.913		
8,700.00	8,682.82	8,550.00	8,462.55	19.31	23.72	-116.23	-163.09	774.32	916.05	876.77	39.27	23.324		
8,800.00	8,782.60	8,619.23	8,528.90	19.54	23.93	-117.22	-150.05	788.98	944.35	904.69	39.67	23.807		
8,900.00	8,882.43	8,682.57	8,587.86	19.76	24.11	-118.51	-131.03	802.00	975.49	935.46	40.03	24.368		
9,000.00	8,982.31	8,740.55	8,639.74	19.98	24.25	-119.99	-107.87	813.46	1,009.83	969.46	40.37	25.016		
9,100.00	9,082.22	8,800.00	8,690.28	20.20	24.37	-121.75	-78.68	824.63	1,047.75	1,007.66	40.69	25.749		
9,200.00	9,182.17	8,850.00	8,730.31	20.42	24.46	-123.43	-50.08	833.47	1,089.45	1,048.46	40.98	26.582		
9,300.00	9,282.14	8,881.89	8,754.51	20.62	24.52	-124.64	-30.02	838.81	1,134.89	1,093.64	41.25	27.514		
9,400.00	9,382.13	8,919.29	8,781.45	20.83	24.57	-126.10	-4.78	844.77	1,184.25	1,142.74	41.51	28.529		
9,500.00	9,482.13	8,950.00	8,802.33	21.03	24.62	-127.39	17.26	849.38	1,237.33	1,195.57	41.76	29.627		
9,600.00	9,582.13	8,982.45	8,823.11	21.23	24.67	-128.65	41.75	853.97	1,294.08	1,252.09	41.99	30.821		
9,700.00	9,682.13	9,000.00	8,833.77	21.43	24.69	-129.88	55.49	856.32	1,354.62	1,312.41	42.20	32.096		
9,800.00	9,782.13	9,032.39	8,852.35	21.63	24.74	-131.08	81.70	860.43	1,418.47	1,376.05	42.42	33.437		
9,900.00	9,882.13	9,050.00	8,861.84	21.83	24.76	-132.23	96.38	862.52	1,485.56	1,442.92	42.64	34.838		
10,000.00	9,982.13	9,072.21	8,873.17	22.03	24.79	-133.34	115.32	865.03	1,555.50	1,512.67	42.83	36.318		
10,100.00	10,082.13	9,100.00	8,886.32	22.23	24.84	-134.40	139.62	867.93	1,628.15	1,585.08	43.07	37.799		
10,200.00	10,182.13	9,100.00	8,886.32	22.43	24.84	-135.41	139.62	867.93	1,702.95	1,659.67	43.28	39.347		
10,300.00	10,282.13	9,118.24	8,894.32	22.63	24.86	-136.37	155.92	869.70	1,779.92	1,736.38	43.55	40.873		

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 312H (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:	312H (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		
10,400.00	10,382.13	9,130.82	8,899.54	22.83	24.88	59.73	167.30	870.85	1,858.81	1,815.04	43.77	42.471		
10,500.00	10,482.13	9,150.00	8,907.03	23.04	24.91	59.01	184.89	872.50	1,939.44	1,895.52	43.92	44.162		
10,600.00	10,582.13	9,150.00	8,907.03	23.24	24.91	59.01	184.89	872.50	2,021.50	1,977.37	44.12	45.813		
10,700.00	10,682.13	9,150.00	8,907.03	23.44	24.91	59.01	184.89	872.50	2,105.10	2,060.77	44.33	47.484		
10,800.00	10,782.13	9,171.31	8,914.66	23.65	24.94	58.20	204.71	874.19	2,189.67	2,145.11	44.56	49.143		
10,900.00	10,882.13	9,179.51	8,917.41	23.85	24.96	57.89	212.41	874.80	2,275.50	2,230.73	44.77	50.829		
11,000.00	10,982.13	9,200.00	8,923.80	24.06	24.99	57.11	231.83	876.21	2,362.48	2,317.51	44.97	52.535		
11,100.00	11,082.13	9,200.00	8,923.80	24.26	24.99	57.11	231.83	876.21	2,450.09	2,404.91	45.18	54.230		
11,200.00	11,181.99	9,200.00	8,923.80	24.45	24.99	47.96	231.83	876.21	2,537.59	2,491.67	45.92	55.263		
11,300.00	11,279.85	9,200.00	8,923.80	24.57	24.99	37.91	231.83	876.21	2,620.38	2,574.28	46.10	56.847		
11,400.00	11,372.77	9,223.71	8,930.34	24.62	25.04	31.05	254.57	877.66	2,695.75	2,650.70	45.04	59.847		
11,500.00	11,457.92	9,250.00	8,936.52	24.63	25.09	26.55	280.08	879.02	2,762.40	2,719.41	42.99	64.261		
11,600.00	11,532.71	9,250.00	8,936.52	24.62	25.09	23.68	280.08	879.02	2,818.35	2,778.06	40.30	69.940		
11,700.00	11,594.87	9,270.95	8,940.62	24.62	25.13	21.69	300.61	879.92	2,862.78	2,825.47	37.30	76.740		
11,800.00	11,642.51	9,300.00	8,945.08	24.66	25.20	20.43	329.29	880.91	2,894.79	2,860.26	34.53	83.836		
11,900.00	11,674.19	9,300.00	8,945.08	24.79	25.20	19.78	329.29	880.91	2,913.45	2,880.96	32.49	89.682		
12,000.00	11,688.93	9,326.18	8,947.88	25.03	25.26	19.60	355.31	881.53	2,918.59	2,886.77	31.82	91.728		
12,100.00	11,690.00	9,350.00	8,949.42	25.38	25.33	19.67	379.08	881.87	2,913.63	2,881.49	32.15	90.638		
12,200.00	11,690.00	9,363.80	8,949.87	25.86	25.37	19.67	392.87	881.97	2,910.41	2,877.99	32.42	89.764		
12,288.24	11,690.00	9,399.38	8,950.00	26.38	25.48	19.67	428.45	882.00	2,909.82	2,877.02	32.81	88.701		
12,300.00	11,690.00	9,411.15	8,950.00	26.45	25.52	19.67	440.22	882.00	2,909.82	2,876.93	32.89	88.473		
12,400.00	11,690.00	9,511.15	8,950.00	27.14	25.95	19.67	540.22	882.00	2,909.82	2,876.17	33.65	86.464		
12,500.00	11,690.00	9,611.15	8,950.00	27.94	26.51	19.67	640.22	882.00	2,909.83	2,875.33	34.50	84.342		
12,600.00	11,690.00	9,711.15	8,950.00	28.84	27.20	19.67	740.22	882.00	2,909.83	2,874.40	35.42	82.146		
12,700.00	11,690.00	9,811.15	8,950.00	29.82	28.02	19.67	840.22	882.00	2,909.83	2,873.41	36.42	79.907		
12,800.00	11,690.00	9,911.15	8,950.00	30.87	28.95	19.67	940.22	882.00	2,909.83	2,872.36	37.47	77.653		
12,900.00	11,690.00	10,011.15	8,950.00	32.00	29.97	19.67	1,040.22	882.00	2,909.83	2,871.24	38.59	75.408		
13,000.00	11,690.00	10,111.15	8,950.00	33.18	31.07	19.67	1,140.22	882.00	2,909.83	2,870.07	39.76	73.190		
13,100.00	11,690.00	10,211.15	8,950.00	34.43	32.25	19.67	1,240.22	882.00	2,909.83	2,868.86	40.98	71.014		
13,200.00	11,690.00	10,311.15	8,950.00	35.72	33.49	19.67	1,340.22	882.00	2,909.83	2,867.60	42.24	68.890		
13,300.00	11,690.00	10,411.15	8,950.00	37.06	34.79	19.67	1,440.22	882.00	2,909.84	2,866.29	43.54	66.826		
13,400.00	11,690.00	10,511.15	8,950.00	38.44	36.13	19.67	1,540.22	882.00	2,909.84	2,864.95	44.89	64.828		
13,500.00	11,690.00	10,611.15	8,950.00	39.85	37.52	19.67	1,640.22	882.00	2,909.84	2,863.58	46.26	62.899		
13,600.00	11,690.00	10,711.15	8,950.00	41.30	38.94	19.67	1,740.22	882.00	2,909.84	2,862.17	47.67	61.042		
13,700.00	11,690.00	10,811.15	8,950.00	42.78	40.40	19.67	1,840.22	882.00	2,909.84	2,860.74	49.11	59.257		
13,800.00	11,690.00	10,911.15	8,950.00	44.28	41.89	19.67	1,940.22	882.00	2,909.84	2,859.27	50.57	57.543		
13,900.00	11,690.00	11,011.15	8,950.00	45.80	43.40	19.67	2,040.22	882.00	2,909.84	2,857.79	52.06	55.899		
14,000.00	11,690.00	11,111.15	8,950.00	47.35	44.94	19.67	2,140.22	882.00	2,909.85	2,856.28	53.56	54.325		
14,100.00	11,690.00	11,211.15	8,950.00	48.92	46.49	19.67	2,240.22	882.00	2,909.85	2,854.75	55.09	52.817		
14,200.00	11,690.00	11,311.15	8,950.00	50.50	48.07	19.67	2,340.22	882.00	2,909.85	2,853.21	56.64	51.373		
14,300.00	11,690.00	11,411.15	8,950.00	52.10	49.67	19.67	2,440.22	882.00	2,909.85	2,851.64	58.21	49.991		
14,400.00	11,690.00	11,511.15	8,950.00	53.72	51.28	19.67	2,540.22	882.00	2,909.85	2,850.06	59.79	48.669		
14,500.00	11,690.00	11,611.15	8,950.00	55.35	52.90	19.67	2,640.22	882.00	2,909.85	2,848.47	61.38	47.404		
14,600.00	11,690.00	11,711.15	8,950.00	56.98	54.54	19.67	2,740.22	882.00	2,909.85	2,846.86	62.99	46.192		
14,700.00	11,690.00	11,811.15	8,950.00	58.64	56.19	19.67	2,840.22	882.00	2,909.86	2,845.24	64.62	45.032		
14,800.00	11,690.00	11,911.15	8,950.00	60.30	57.85	19.67	2,940.22	882.00	2,909.86	2,843.61	66.25	43.921		
14,900.00	11,690.00	12,011.15	8,950.00	61.97	59.52	19.67	3,040.22	882.00	2,909.86	2,841.96	67.90	42.857		
15,000.00	11,690.00	12,111.15	8,950.00	63.65	61.19	19.67	3,140.22	882.00	2,909.86	2,840.31	69.55	41.837		
15,100.00	11,690.00	12,211.15	8,950.00	65.33	62.88	19.67	3,240.22	882.00	2,909.86	2,838.64	71.22	40.859		
15,200.00	11,690.00	12,311.15	8,950.00	67.03	64.57	19.67	3,340.22	882.00	2,909.86	2,836.97	72.89	39.921		
15,300.00	11,690.00	12,411.15	8,950.00	68.73	66.28	19.67	3,440.22	882.00	2,909.86	2,835.29	74.57	39.020		
15,400.00	11,690.00	12,511.15	8,950.00	70.44	67.98	19.67	3,540.22	882.00	2,909.86	2,833.60	76.26	38.156		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 321H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,500.00	11,690.00	12,611.15	8,950.00	72.15	69.70	19.67	3,640.22	882.00	2,909.87	2,831.91	77.96	37.325		
15,600.00	11,690.00	12,711.15	8,950.00	73.87	71.42	19.67	3,740.22	882.00	2,909.87	2,830.20	79.66	36.527		
15,700.00	11,690.00	12,811.15	8,950.00	75.59	73.14	19.67	3,840.22	882.00	2,909.87	2,828.50	81.37	35.760		
15,800.00	11,690.00	12,911.15	8,950.00	77.32	74.87	19.67	3,940.22	882.00	2,909.87	2,826.78	83.09	35.021		
15,900.00	11,690.00	13,011.15	8,950.00	79.05	76.60	19.67	4,040.22	882.00	2,909.87	2,825.06	84.81	34.310		
16,000.00	11,690.00	13,111.15	8,950.00	80.79	78.34	19.67	4,140.22	882.00	2,909.87	2,823.33	86.54	33.625		
16,100.00	11,690.00	13,211.15	8,950.00	82.53	80.09	19.67	4,240.22	882.00	2,909.87	2,821.60	88.27	32.966		
16,200.00	11,690.00	13,311.15	8,950.00	84.28	81.83	19.67	4,340.22	882.00	2,909.88	2,819.87	90.01	32.330		
16,300.00	11,690.00	13,411.15	8,950.00	86.02	83.58	19.67	4,440.22	882.00	2,909.88	2,818.13	91.75	31.716		
16,357.86	11,690.00	13,469.01	8,950.00	87.04	84.59	19.67	4,498.08	882.00	2,909.88	2,817.12	92.76	31.371		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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 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	-32.50	284.02	-180.95	336.76					
100.00	100.00	100.00	100.00	0.08	0.08	-32.50	284.02	-180.95	336.76	336.61	0.16	2,140.403		
200.00	200.00	200.00	200.00	0.30	0.30	-32.50	284.02	-180.95	336.76	336.16	0.61	554.920		
300.00	300.00	300.00	300.00	0.53	0.53	-32.50	284.02	-180.95	336.76	335.71	1.06	318.784		
400.00	400.00	400.00	400.00	0.75	0.75	-32.50	284.02	-180.95	336.76	335.26	1.51	223.624		
500.00	500.00	500.00	500.00	0.98	0.98	-32.50	284.02	-180.95	336.76	334.81	1.96	172.217		
600.00	600.00	600.00	600.00	1.20	1.20	-32.50	284.02	-180.95	336.76	334.36	2.40	140.027		
700.00	700.00	700.00	700.00	1.43	1.43	-32.50	284.02	-180.95	336.76	333.91	2.85	117.975		
800.00	800.00	800.00	800.00	1.65	1.65	-32.50	284.02	-180.95	336.76	333.46	3.30	101.924		
900.00	900.00	900.00	900.00	1.88	1.88	-32.50	284.02	-180.95	336.76	333.01	3.75	89.718		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-32.50	284.02	-180.95	336.76	332.56	4.20	80.122		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-32.50	284.02	-180.95	336.76	332.11	4.65	72.381		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-32.50	284.02	-180.95	336.76	331.66	5.10	66.004		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-32.50	284.02	-180.95	336.76	331.21	5.55	60.659		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-32.50	284.02	-180.95	336.76	330.76	6.00	56.116		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-32.50	284.02	-180.95	336.76	330.31	6.45	52.205		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-32.50	284.02	-180.95	336.76	329.86	6.90	48.804		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-32.50	284.02	-180.95	336.76	329.41	7.35	45.819		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-32.50	284.02	-180.95	336.76	328.96	7.80	43.178		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-32.50	284.02	-180.95	336.76	328.51	8.25	40.825		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-32.50	284.02	-180.95	336.76	328.06	8.70	38.715		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-32.50	284.02	-180.95	336.76	327.62	9.15	36.813		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-32.50	284.02	-180.95	336.76	327.17	9.60	35.089		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-32.50	284.02	-180.95	336.76	326.72	10.05	33.519		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-32.50	284.02	-180.95	336.76	326.27	10.50	32.083		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-32.50	284.02	-180.95	336.76	325.82	10.95	30.766		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-32.50	284.02	-180.95	336.76	325.37	11.40	29.552		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-32.50	284.02	-180.95	336.76	324.92	11.85	28.430		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-32.50	284.02	-180.95	336.76	324.47	12.29	27.391		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-32.50	284.02	-180.95	336.76	324.02	12.74	26.425		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-32.50	284.02	-180.95	336.76	323.57	13.19	25.524		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-32.50	284.02	-180.95	336.76	323.12	13.64	24.683		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-32.50	284.02	-180.95	336.76	322.67	14.09	23.896		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-32.50	284.02	-180.95	336.76	322.22	14.54	23.157		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-32.50	284.02	-180.95	336.76	321.77	14.99	22.463		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-32.50	284.02	-180.95	336.76	321.32	15.44	21.809		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-32.50	284.02	-180.95	336.76	320.87	15.89	21.192		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-32.50	284.02	-180.95	336.76	320.42	16.34	20.609		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-32.50	284.02	-180.95	336.76	319.97	16.79	20.057		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-32.50	284.02	-180.95	336.76	319.52	17.24	19.534		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-32.50	284.02	-180.95	336.76	319.07	17.69	19.038		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-32.50	284.02	-180.95	336.76	318.62	18.14	18.566		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-32.50	284.02	-180.95	336.76	318.18	18.59	18.117		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-32.50	284.02	-180.95	336.76	317.73	19.04	17.689		
4,400.00	4,400.00	4,405.81	4,405.80	9.71	9.72	133.78	283.06	-180.75	336.50	317.07	19.44	17.312		
4,500.00	4,499.96	4,511.61	4,511.56	9.88	9.90	133.95	280.19	-180.16	335.73	315.95	19.78	16.973		
4,600.00	4,599.86	4,617.38	4,617.22	10.05	10.08	134.24	275.41	-179.18	334.44	314.32	20.12	16.619		
4,700.00	4,699.68	4,723.11	4,722.73	10.23	10.27	134.64	268.72	-177.80	332.65	312.18	20.47	16.251		
4,800.00	4,799.37	4,828.80	4,828.05	10.40	10.46	135.16	260.13	-176.04	330.37	309.56	20.82	15.870		
4,900.00	4,898.94	4,934.43	4,933.14	10.58	10.65	135.73	249.65	-173.88	327.34	306.16	21.18	15.456		
5,000.00	4,998.51	5,039.47	5,037.42	10.77	10.84	136.22	237.35	-171.36	322.65	301.10	21.55	14.972		
5,100.00	5,098.08	5,139.30	5,136.44	10.96	11.04	136.65	224.91	-168.80	317.26	295.34	21.92	14.474		

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 312H (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:	312H (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

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 Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,197.65	5,239.12	5,235.45	11.15	11.24	137.09	212.47	-166.24	311.88	289.59	22.29	13.991		
5,300.00	5,297.22	5,338.95	5,334.47	11.34	11.45	137.55	200.03	-163.68	306.52	283.85	22.67	13.521		
5,400.00	5,396.79	5,438.77	5,433.48	11.55	11.66	138.03	187.59	-161.13	301.19	278.14	23.05	13.065		
5,500.00	5,496.36	5,538.60	5,532.49	11.75	11.88	138.52	175.15	-158.57	295.87	272.43	23.44	12.623		
5,600.00	5,595.93	5,638.43	5,631.51	11.96	12.10	139.03	162.71	-156.01	290.58	266.75	23.83	12.194		
5,700.00	5,695.50	5,738.25	5,730.52	12.17	12.33	139.56	150.27	-153.46	285.31	261.09	24.22	11.778		
5,800.00	5,795.07	5,838.08	5,829.54	12.38	12.56	140.11	137.83	-150.90	280.07	255.45	24.62	11.375		
5,900.00	5,894.64	5,937.90	5,928.55	12.59	12.80	140.68	125.39	-148.34	274.85	249.83	25.02	10.985		
6,000.00	5,994.21	6,037.73	6,027.57	12.81	13.03	141.27	112.95	-145.78	269.67	244.24	25.42	10.606		
6,100.00	6,093.78	6,137.55	6,126.58	13.03	13.28	141.89	100.51	-143.23	264.51	238.68	25.83	10.240		
6,200.00	6,193.35	6,237.38	6,225.60	13.26	13.52	142.53	88.07	-140.67	259.38	233.15	26.24	9.886		
6,300.00	6,292.92	6,337.21	6,324.61	13.48	13.77	143.20	75.63	-138.11	254.29	227.64	26.65	9.543		
6,400.00	6,392.49	6,437.03	6,423.63	13.71	14.03	143.89	63.20	-135.56	249.23	222.18	27.06	9.211		
6,500.00	6,492.06	6,536.86	6,522.64	13.94	14.28	144.61	50.76	-133.00	244.22	216.74	27.47	8.890		
6,600.00	6,591.63	6,636.68	6,621.65	14.17	14.54	145.36	38.32	-130.44	239.24	211.35	27.89	8.579		
6,700.00	6,691.20	6,736.51	6,720.67	14.41	14.80	146.15	25.88	-127.88	234.30	206.00	28.30	8.279		
6,800.00	6,790.77	6,836.33	6,819.68	14.64	15.07	146.96	13.44	-125.33	229.41	200.69	28.72	7.988		
6,900.00	6,890.34	6,936.16	6,918.70	14.88	15.33	147.82	1.00	-122.77	224.57	195.43	29.14	7.708		
7,000.00	6,989.91	7,035.99	7,017.71	15.12	15.60	148.71	-11.44	-120.21	219.78	190.23	29.55	7.437		
7,100.00	7,089.48	7,135.81	7,116.73	15.36	15.87	149.63	-23.88	-117.66	215.05	185.07	29.97	7.175		
7,200.00	7,189.05	7,235.51	7,212.72	15.60	16.12	150.59	-35.32	-115.31	211.03	180.64	30.39	6.943		
7,300.00	7,288.62	7,328.89	7,308.57	15.84	16.37	151.60	-45.14	-113.29	208.74	177.92	30.81	6.774		
7,380.66	7,368.94	7,406.66	7,386.03	16.04	16.56	152.44	-51.92	-111.89	208.17	177.01	31.15	6.682 CC		
7,400.00	7,388.19	7,425.30	7,404.62	16.09	16.60	152.64	-53.39	-111.59	208.20	176.96	31.24	6.665 ES		
7,500.00	7,487.76	7,521.71	7,500.78	16.33	16.83	153.70	-60.05	-110.22	209.42	177.76	31.66	6.615 SF		
7,600.00	7,587.33	7,618.04	7,596.97	16.58	17.05	154.75	-65.13	-109.18	212.39	180.32	32.08	6.622		
7,700.00	7,686.90	7,714.24	7,693.11	16.83	17.27	155.76	-68.61	-108.46	217.12	184.63	32.49	6.682		
7,800.00	7,786.47	7,810.27	7,789.12	17.08	17.47	156.71	-70.52	-108.07	223.59	190.68	32.91	6.794		
7,900.00	7,886.04	7,907.20	7,886.04	17.33	17.66	157.59	-70.91	-107.99	231.71	198.39	33.32	6.954		
8,000.00	7,985.61	8,006.77	7,985.61	17.58	17.86	158.43	-70.91	-107.99	240.31	206.56	33.75	7.121		
8,100.00	8,085.18	8,100.00	8,078.84	17.83	18.05	159.18	-70.49	-107.99	249.45	215.29	34.16	7.303		
8,200.00	8,184.75	8,165.75	8,144.25	18.08	18.14	159.82	-64.23	-107.99	267.37	232.86	34.51	7.748		
8,300.00	8,284.32	8,229.91	8,206.99	18.34	18.20	160.54	-50.93	-107.99	296.52	261.67	34.85	8.509		
8,400.00	8,383.89	8,289.17	8,263.28	18.59	18.23	161.21	-32.49	-107.99	335.83	300.66	35.17	9.549		
8,500.00	8,483.47	8,350.00	8,318.76	18.84	18.24	161.90	-7.62	-107.99	384.09	348.60	35.49	10.823		
8,600.00	8,583.11	8,400.00	8,362.18	19.08	18.23	162.47	17.13	-107.99	439.35	403.57	35.79	12.277		
8,700.00	8,682.82	8,434.97	8,391.19	19.31	18.22	162.87	36.65	-107.99	500.30	464.25	36.05	13.876		
8,800.00	8,782.60	8,473.85	8,421.98	19.54	18.21	163.27	60.38	-107.99	566.32	530.00	36.32	15.591		
8,900.00	8,882.43	8,500.00	8,441.75	19.76	18.20	163.57	77.49	-107.99	636.57	600.00	36.57	17.406		
9,000.00	8,982.31	8,550.00	8,477.29	19.98	18.19	163.97	112.64	-107.99	710.16	673.32	36.84	19.278		
9,100.00	9,082.22	8,567.75	8,489.15	20.20	18.19	164.20	125.85	-107.99	786.40	749.34	37.07	21.216		
9,200.00	9,182.17	8,600.00	8,509.63	20.42	18.19	164.48	150.75	-107.99	865.28	827.97	37.31	23.195		
9,300.00	9,282.14	8,615.79	8,519.14	20.62	18.20	164.71	163.36	-107.99	946.03	908.51	37.52	25.211		
9,400.00	9,382.13	8,650.00	8,538.52	20.83	18.21	164.98	191.54	-107.99	1,028.81	991.05	37.76	27.249		
9,500.00	9,482.13	8,650.00	8,538.52	21.03	18.21	165.17	191.54	-107.99	1,112.58	1,074.63	37.96	29.311		
9,600.00	9,582.13	8,672.74	8,550.46	21.23	18.22	-0.99	210.89	-107.99	1,197.91	1,159.73	38.18	31.379		
9,700.00	9,682.13	8,700.00	8,563.75	21.43	18.25	-0.95	234.69	-107.99	1,284.89	1,246.49	38.40	33.459		
9,800.00	9,782.13	8,700.00	8,563.75	21.63	18.25	-0.95	234.69	-107.99	1,372.82	1,334.20	38.61	35.553		
9,900.00	9,882.13	8,700.00	8,563.75	21.83	18.25	-0.95	234.69	-107.99	1,462.29	1,423.47	38.82	37.665		
10,000.00	9,982.13	8,727.63	8,576.05	22.03	18.28	-0.91	259.42	-107.99	1,552.14	1,513.09	39.05	39.749		
10,100.00	10,082.13	8,750.00	8,585.13	22.23	18.31	-0.89	279.87	-107.99	1,643.29	1,604.02	39.27	41.845		
10,200.00	10,182.13	8,750.00	8,585.13	22.43	18.31	-0.89	279.87	-107.99	1,734.88	1,695.40	39.48	43.941		

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 312H (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:	312H (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 Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,300.00	10,282.13	8,750.00	8,585.13	22.63	18.31	-0.89	279.87	-107.99	1,827.35	1,787.66	39.69	46.036			
10,400.00	10,382.13	8,750.00	8,585.13	22.83	18.31	-0.89	279.87	-107.99	1,920.57	1,880.67	39.91	48.127			
10,500.00	10,482.13	8,774.58	8,594.17	23.04	18.36	-0.86	302.72	-107.99	2,013.77	1,973.64	40.13	50.184			
10,600.00	10,582.13	8,800.00	8,602.48	23.24	18.41	-0.83	326.75	-107.99	2,108.11	2,067.76	40.35	52.245			
10,700.00	10,682.13	8,800.00	8,602.48	23.44	18.41	-0.83	326.75	-107.99	2,202.28	2,161.72	40.56	54.293			
10,800.00	10,782.13	8,800.00	8,602.48	23.65	18.41	-0.83	326.75	-107.99	2,296.95	2,256.18	40.78	56.331			
10,900.00	10,882.13	8,800.00	8,602.48	23.85	18.41	-0.83	326.75	-107.99	2,392.05	2,351.06	40.99	58.358			
11,000.00	10,982.13	8,800.00	8,602.48	24.06	18.41	-0.83	326.75	-107.99	2,487.54	2,446.33	41.20	60.373			
11,100.00	11,082.13	8,800.00	8,602.48	24.26	18.41	-0.83	326.75	-107.99	2,583.37	2,541.95	41.42	62.375			
11,200.00	11,181.99	8,800.00	8,602.48	24.45	18.41	-0.59	326.75	-107.99	2,678.37	2,636.99	41.37	64.740			
11,300.00	11,279.85	8,826.05	8,609.89	24.57	18.48	-0.41	351.72	-107.99	2,766.92	2,726.38	40.54	68.257			
11,400.00	11,372.77	8,850.00	8,615.68	24.62	18.55	-0.32	374.96	-107.99	2,847.70	2,808.72	38.98	73.063			
11,500.00	11,457.92	8,850.00	8,615.68	24.63	18.55	-0.27	374.96	-107.99	2,917.96	2,881.15	36.81	79.278			
11,600.00	11,532.71	8,850.00	8,615.68	24.62	18.55	-0.24	374.96	-107.99	2,976.94	2,942.70	34.24	86.946			
11,700.00	11,594.87	8,875.14	8,620.72	24.62	18.64	-0.22	399.58	-107.99	3,022.90	2,991.32	31.58	95.708			
11,800.00	11,642.51	8,900.00	8,624.64	24.66	18.73	-0.20	424.13	-107.99	3,055.42	3,026.22	29.20	104.640			
11,900.00	11,674.19	8,900.00	8,624.64	24.79	18.73	-0.20	424.13	-107.99	3,073.49	3,046.02	27.47	111.889			
12,000.00	11,688.93	8,921.27	8,627.14	25.03	18.82	-0.19	445.25	-107.99	3,076.97	3,050.08	26.89	114.411			
12,100.00	11,690.00	8,950.00	8,629.27	25.38	18.94	-0.20	473.90	-107.99	3,069.66	3,042.50	27.16	113.024			
12,200.00	11,690.00	8,950.00	8,629.27	25.86	18.94	-0.20	473.90	-107.99	3,063.67	3,036.33	27.34	112.052			
12,300.00	11,690.00	8,978.15	8,629.96	26.45	19.07	-0.20	502.04	-107.99	3,060.68	3,033.05	27.63	110.783			
12,387.60	11,690.00	9,003.96	8,629.96	27.06	19.21	-0.20	527.85	-107.99	3,060.06	3,032.15	27.91	109.643			
12,400.00	11,690.00	9,016.36	8,629.96	27.14	19.28	-0.20	540.25	-107.99	3,060.06	3,032.08	27.98	109.377			
12,500.00	11,690.00	9,116.36	8,629.96	27.94	19.91	-0.20	640.25	-107.99	3,060.06	3,031.50	28.56	107.156			
12,600.00	11,690.00	9,216.36	8,629.96	28.84	20.69	-0.20	740.25	-107.99	3,060.06	3,030.85	29.20	104.782			
12,700.00	11,690.00	9,316.36	8,629.96	29.82	21.58	-0.20	840.25	-107.99	3,060.05	3,030.14	29.91	102.299			
12,800.00	11,690.00	9,416.36	8,629.96	30.87	22.59	-0.20	940.25	-107.99	3,060.05	3,029.38	30.68	99.747			
12,900.00	11,690.00	9,516.36	8,629.96	32.00	23.70	-0.20	1,040.25	-107.99	3,060.05	3,028.56	31.50	97.159			
13,000.00	11,690.00	9,616.36	8,629.96	33.18	24.90	-0.20	1,140.25	-107.99	3,060.05	3,027.69	32.36	94.563			
13,100.00	11,690.00	9,716.36	8,629.97	34.43	26.16	-0.20	1,240.25	-107.99	3,060.05	3,026.78	33.27	91.984			
13,200.00	11,690.00	9,816.36	8,629.97	35.72	27.49	-0.20	1,340.25	-107.99	3,060.05	3,025.84	34.21	89.440			
13,300.00	11,690.00	9,916.36	8,629.97	37.06	28.88	-0.20	1,440.25	-107.99	3,060.05	3,024.85	35.20	86.944			
13,400.00	11,690.00	10,016.36	8,629.97	38.44	30.31	-0.19	1,540.25	-107.99	3,060.05	3,023.84	36.21	84.508			
13,500.00	11,690.00	10,116.36	8,629.97	39.85	31.78	-0.19	1,640.25	-107.99	3,060.05	3,022.79	37.25	82.139			
13,600.00	11,690.00	10,216.36	8,629.97	41.30	33.29	-0.19	1,740.25	-107.99	3,060.05	3,021.72	38.33	79.843			
13,700.00	11,690.00	10,316.36	8,629.97	42.78	34.82	-0.19	1,840.25	-107.99	3,060.04	3,020.62	39.42	77.623			
13,800.00	11,690.00	10,416.36	8,629.97	44.28	36.39	-0.19	1,940.25	-107.99	3,060.04	3,019.50	40.54	75.481			
13,900.00	11,690.00	10,516.36	8,629.97	45.80	37.97	-0.19	2,040.25	-107.99	3,060.04	3,018.36	41.68	73.418			
14,000.00	11,690.00	10,616.36	8,629.98	47.35	39.58	-0.19	2,140.25	-107.99	3,060.04	3,017.20	42.84	71.432			
14,100.00	11,690.00	10,716.36	8,629.98	48.92	41.21	-0.19	2,240.25	-107.99	3,060.04	3,016.03	44.02	69.522			
14,200.00	11,690.00	10,816.36	8,629.98	50.50	42.85	-0.19	2,340.25	-107.99	3,060.04	3,014.83	45.21	67.688			
14,300.00	11,690.00	10,916.36	8,629.98	52.10	44.51	-0.19	2,440.25	-107.99	3,060.04	3,013.62	46.42	65.927			
14,400.00	11,690.00	11,016.36	8,629.98	53.72	46.18	-0.19	2,540.25	-107.99	3,060.04	3,012.40	47.64	64.236			
14,500.00	11,690.00	11,116.36	8,629.98	55.35	47.86	-0.19	2,640.25	-107.99	3,060.04	3,011.16	48.87	62.614			
14,600.00	11,690.00	11,216.36	8,629.98	56.98	49.55	-0.19	2,740.25	-107.99	3,060.04	3,009.92	50.12	61.056			
14,700.00	11,690.00	11,316.36	8,629.98	58.64	51.25	-0.19	2,840.25	-107.99	3,060.03	3,008.66	51.38	59.562			
14,800.00	11,690.00	11,416.36	8,629.98	60.30	52.96	-0.19	2,940.25	-107.99	3,060.03	3,007.39	52.64	58.127			
14,900.00	11,690.00	11,516.36	8,629.98	61.97	54.68	-0.19	3,040.25	-107.99	3,060.03	3,006.11	53.92	56.750			
15,000.00	11,690.00	11,616.36	8,629.99	63.65	56.41	-0.19	3,140.25	-107.99	3,060.03	3,004.82	55.21	55.427			
15,100.00	11,690.00	11,716.36	8,629.99	65.33	58.14	-0.19	3,240.25	-107.99	3,060.03	3,003.53	56.50	54.157			
15,200.00	11,690.00	11,816.36	8,629.99	67.03	59.87	-0.19	3,340.25	-107.99	3,060.03	3,002.22	57.81	52.936			
15,300.00	11,690.00	11,916.36	8,629.99	68.73	61.61	-0.19	3,440.25	-107.99	3,060.03	3,000.91	59.12	51.763			

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 327H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,400.00	11,690.00	12,016.36	8,629.99	70.44	63.36	-0.19	3,540.25	-107.99	3,060.03	2,999.59	60.43	50.635		
15,500.00	11,690.00	12,116.36	8,629.99	72.15	65.11	-0.19	3,640.25	-107.99	3,060.03	2,998.27	61.76	49.550		
15,600.00	11,690.00	12,216.36	8,629.99	73.87	66.86	-0.19	3,740.25	-107.99	3,060.03	2,996.94	63.09	48.505		
15,700.00	11,690.00	12,316.36	8,629.99	75.59	68.62	-0.19	3,840.25	-107.99	3,060.02	2,995.60	64.42	47.500		
15,800.00	11,690.00	12,416.36	8,629.99	77.32	70.39	-0.19	3,940.25	-107.99	3,060.02	2,994.26	65.76	46.532		
15,900.00	11,690.00	12,516.36	8,630.00	79.05	72.15	-0.19	4,040.25	-107.99	3,060.02	2,992.91	67.11	45.598		
16,000.00	11,690.00	12,616.36	8,630.00	80.79	73.92	-0.19	4,140.25	-107.99	3,060.02	2,991.56	68.46	44.699		
16,100.00	11,690.00	12,716.36	8,630.00	82.53	75.69	-0.19	4,240.25	-107.99	3,060.02	2,990.21	69.81	43.831		
16,200.00	11,690.00	12,816.36	8,630.00	84.28	77.46	-0.19	4,340.25	-107.99	3,060.02	2,988.85	71.17	42.994		
16,300.00	11,690.00	12,916.36	8,630.00	86.02	79.24	-0.19	4,440.25	-107.99	3,060.02	2,987.48	72.54	42.186		
16,357.86	11,690.00	12,974.22	8,630.00	87.04	80.27	-0.19	4,498.11	-107.99	3,060.02	2,986.69	73.33	41.731		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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	-37.69	234.02	-180.81	295.73					
100.00	100.00	100.00	100.00	0.08	0.08	-37.69	234.02	-180.81	295.73	295.57	0.16	1,879.600		
200.00	200.00	200.00	200.00	0.30	0.30	-37.69	234.02	-180.81	295.73	295.12	0.61	487.304		
300.00	300.00	300.00	300.00	0.53	0.53	-37.69	234.02	-180.81	295.73	294.67	1.06	279.941		
400.00	400.00	400.00	400.00	0.75	0.75	-37.69	234.02	-180.81	295.73	294.22	1.51	196.376		
500.00	500.00	500.00	500.00	0.98	0.98	-37.69	234.02	-180.81	295.73	293.77	1.96	151.232		
600.00	600.00	600.00	600.00	1.20	1.20	-37.69	234.02	-180.81	295.73	293.32	2.40	122.965		
700.00	700.00	700.00	700.00	1.43	1.43	-37.69	234.02	-180.81	295.73	292.87	2.85	103.600		
800.00	800.00	800.00	800.00	1.65	1.65	-37.69	234.02	-180.81	295.73	292.43	3.30	89.505		
900.00	900.00	900.00	900.00	1.88	1.88	-37.69	234.02	-180.81	295.73	291.98	3.75	78.786		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-37.69	234.02	-180.81	295.73	291.53	4.20	70.359		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-37.69	234.02	-180.81	295.73	291.08	4.65	63.561		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-37.69	234.02	-180.81	295.73	290.63	5.10	57.961		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-37.69	234.02	-180.81	295.73	290.18	5.55	53.268		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-37.69	234.02	-180.81	295.73	289.73	6.00	49.278		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-37.69	234.02	-180.81	295.73	289.28	6.45	45.844		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-37.69	234.02	-180.81	295.73	288.83	6.90	42.857		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-37.69	234.02	-180.81	295.73	288.38	7.35	40.236		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-37.69	234.02	-180.81	295.73	287.93	7.80	37.917		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-37.69	234.02	-180.81	295.73	287.48	8.25	35.851		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-37.69	234.02	-180.81	295.73	287.03	8.70	33.998		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-37.69	234.02	-180.81	295.73	286.58	9.15	32.327		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-37.69	234.02	-180.81	295.73	286.13	9.60	30.813		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-37.69	234.02	-180.81	295.73	285.68	10.05	29.434		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-37.69	234.02	-180.81	295.73	285.23	10.50	28.174		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-37.69	234.02	-180.81	295.73	284.78	10.95	27.017		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-37.69	234.02	-180.81	295.73	284.33	11.40	25.951		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-37.69	234.02	-180.81	295.73	283.88	11.85	24.966		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-37.69	234.02	-180.81	295.73	283.43	12.29	24.053		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-37.69	234.02	-180.81	295.73	282.99	12.74	23.205		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-37.69	234.02	-180.81	295.73	282.54	13.19	22.414		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-37.69	234.02	-180.81	295.73	282.09	13.64	21.676		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-37.69	234.02	-180.81	295.73	281.64	14.09	20.984		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-37.69	234.02	-180.81	295.73	281.19	14.54	20.336		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-37.69	234.02	-180.81	295.73	280.74	14.99	19.726		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-37.69	234.02	-180.81	295.73	280.29	15.44	19.152		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-37.69	234.02	-180.81	295.73	279.84	15.89	18.610		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-37.69	234.02	-180.81	295.73	279.39	16.34	18.098		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-37.69	234.02	-180.81	295.73	278.94	16.79	17.613		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-37.69	234.02	-180.81	295.73	278.49	17.24	17.154		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-37.69	234.02	-180.81	295.73	278.04	17.69	16.718		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-37.69	234.02	-180.81	295.73	277.59	18.14	16.304		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-37.69	234.02	-180.81	295.73	277.14	18.59	15.910		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-37.69	234.02	-180.81	295.73	276.69	19.04	15.534		
4,400.00	4,400.00	4,404.46	4,404.45	9.71	9.73	128.78	233.72	-179.90	295.52	276.07	19.45	15.197		
4,500.00	4,499.96	4,508.82	4,508.77	9.88	9.93	129.51	232.82	-177.19	294.92	275.11	19.81	14.889		
4,600.00	4,599.86	4,613.00	4,612.84	10.05	10.13	130.73	231.33	-172.69	294.02	273.85	20.17	14.577		
4,700.00	4,699.88	4,716.90	4,716.53	10.23	10.33	132.44	229.25	-166.42	292.98	272.44	20.53	14.268		
4,800.00	4,799.37	4,820.43	4,819.71	10.40	10.54	134.64	226.58	-158.39	292.01	271.11	20.90	13.972		
4,900.00	4,898.94	4,923.54	4,922.31	10.58	10.75	137.26	223.35	-148.63	291.09	269.81	21.28	13.681		
5,000.00	4,998.51	5,026.27	5,024.32	10.77	10.97	140.15	219.55	-137.18	289.55	267.88	21.67	13.364		
5,100.00	5,098.08	5,128.55	5,125.67	10.96	11.19	143.32	215.19	-124.04	287.54	265.48	22.06	13.032		

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 312H (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:	312H (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 Tooface (")	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,197.65	5,230.34	5,226.26	11.15	11.43	146.80	210.29	-109.27	285.29	262.81	22.47	12.695			
5,300.00	5,297.22	5,331.56	5,326.00	11.34	11.67	150.58	204.86	-92.90	283.06	260.17	22.89	12.365			
5,400.00	5,396.79	5,432.17	5,424.82	11.55	11.93	154.69	198.92	-74.98	281.18	257.86	23.33	12.055			
5,500.00	5,496.36	5,530.63	5,521.27	11.75	12.19	158.99	192.69	-56.21	280.16	256.39	23.77	11.785			
5,514.85	5,511.15	5,545.14	5,535.48	11.78	12.23	159.62	191.77	-53.43	280.14	256.30	23.84	11.751	CC, ES		
5,600.00	5,595.93	5,628.31	5,616.94	11.96	12.46	163.27	186.49	-37.50	280.74	256.51	24.23	11.585			
5,700.00	5,695.50	5,725.98	5,712.60	12.17	12.74	167.51	180.28	-18.80	282.95	258.24	24.70	11.453			
5,800.00	5,795.07	5,823.65	5,808.26	12.38	13.03	171.66	174.08	-0.09	286.75	261.56	25.19	11.384			
5,900.00	5,894.64	5,921.32	5,903.92	12.59	13.33	175.70	167.87	18.61	292.08	266.40	25.68	11.373	SF		
6,000.00	5,994.21	6,018.99	5,999.59	12.81	13.63	179.57	161.67	37.32	298.86	272.67	26.18	11.414			
6,100.00	6,093.78	6,116.66	6,095.25	13.03	13.94	-176.74	155.47	58.02	306.99	280.30	26.69	11.502			
6,200.00	6,193.35	6,214.33	6,190.91	13.26	14.25	-173.24	149.26	74.73	316.37	289.17	27.20	11.630			
6,300.00	6,292.92	6,312.01	6,286.57	13.48	14.57	-169.95	143.06	93.43	326.89	299.17	27.72	11.794			
6,400.00	6,392.49	6,409.68	6,382.24	13.71	14.90	-166.87	136.85	112.14	338.45	310.21	28.23	11.988			
6,500.00	6,492.06	6,507.35	6,477.90	13.94	15.23	-163.99	130.65	130.84	350.94	322.19	28.75	12.206			
6,600.00	6,591.63	6,605.02	6,573.56	14.17	15.57	-161.31	124.44	149.55	364.26	334.99	29.27	12.445			
6,700.00	6,691.20	6,702.69	6,669.22	14.41	15.91	-158.82	118.24	168.25	378.33	348.55	29.79	12.701			
6,800.00	6,790.77	6,800.36	6,764.89	14.64	16.25	-156.51	112.04	186.96	393.07	362.77	30.31	12.970			
6,900.00	6,890.34	6,898.03	6,860.55	14.88	16.60	-154.36	105.83	205.66	408.41	377.59	30.83	13.249			
7,000.00	6,989.91	6,995.70	6,956.21	15.12	16.95	-152.37	99.63	224.37	424.28	392.93	31.35	13.535			
7,100.00	7,089.48	7,093.38	7,051.87	15.36	17.31	-150.52	93.42	243.07	440.62	408.75	31.87	13.827			
7,200.00	7,189.05	7,191.05	7,147.54	15.60	17.67	-148.80	87.22	261.78	457.38	425.00	32.39	14.123			
7,300.00	7,288.62	7,288.72	7,243.20	15.84	18.03	-147.20	81.01	280.48	474.52	441.62	32.91	14.420			
7,400.00	7,388.19	7,386.39	7,338.86	16.09	18.39	-145.72	74.81	299.19	492.01	458.58	33.43	14.718			
7,500.00	7,487.76	7,484.06	7,434.52	16.33	18.76	-144.33	68.61	317.89	509.79	475.84	33.95	15.016			
7,600.00	7,587.33	7,581.73	7,530.19	16.58	19.13	-143.04	62.40	336.60	527.85	493.37	34.47	15.312			
7,700.00	7,686.90	7,679.40	7,625.85	16.83	19.50	-141.83	56.20	355.30	546.15	511.15	35.00	15.606			
7,800.00	7,786.47	7,777.07	7,721.51	17.08	19.87	-140.70	49.99	374.01	564.67	529.15	35.52	15.897			
7,900.00	7,886.04	7,874.75	7,817.17	17.33	20.25	-139.65	43.79	392.71	583.40	547.35	36.05	16.185			
8,000.00	7,985.61	7,972.42	7,912.84	17.58	20.63	-138.65	37.58	411.42	602.31	565.73	36.57	16.469			
8,100.00	8,085.18	8,070.09	8,008.50	17.83	21.01	-137.72	31.38	430.12	621.38	584.28	37.10	16.749			
8,200.00	8,184.75	8,139.66	8,076.71	18.08	21.26	-137.23	28.75	443.46	642.21	604.68	37.53	17.113			
8,300.00	8,284.32	8,200.00	8,135.76	18.34	21.46	-137.29	32.86	455.01	668.53	630.61	37.91	17.633			
8,400.00	8,383.89	8,250.00	8,184.15	18.59	21.60	-137.70	41.05	464.48	700.29	662.04	38.26	18.306			
8,500.00	8,483.47	8,300.00	8,231.66	18.84	21.74	-138.44	53.50	473.78	737.30	698.71	38.59	19.105			
8,600.00	8,583.11	8,350.00	8,277.92	19.08	21.86	-139.51	70.12	482.83	778.92	740.00	38.92	20.014			
8,700.00	8,682.82	8,400.00	8,322.58	19.31	21.97	-140.78	90.79	491.58	824.93	785.71	39.23	21.030			
8,800.00	8,782.60	8,450.00	8,365.30	19.54	22.07	-142.21	115.35	499.95	875.29	835.77	39.52	22.149			
8,900.00	8,882.43	8,483.80	8,392.93	19.76	22.13	-143.32	134.06	505.36	929.65	889.87	39.78	23.370			
9,000.00	8,982.31	8,518.62	8,420.20	19.98	22.19	-144.51	155.03	510.70	987.78	947.75	40.04	24.673			
9,100.00	9,082.22	8,550.00	8,443.66	20.20	22.24	-145.65	175.35	515.30	1,049.37	1,009.08	40.29	26.049			
9,200.00	9,182.17	8,579.20	8,464.48	20.42	22.29	-146.75	195.41	519.38	1,114.09	1,073.57	40.52	27.496			
9,300.00	9,282.14	8,600.00	8,478.69	20.62	22.32	-147.62	210.34	522.17	1,181.67	1,140.92	40.75	28.995			
9,400.00	9,382.13	8,629.65	8,498.00	20.83	22.36	-148.76	232.51	525.96	1,251.72	1,210.74	40.97	30.550			
9,500.00	9,482.13	8,650.00	8,510.59	21.03	22.40	-149.63	248.30	528.43	1,324.06	1,282.86	41.20	32.137			
9,600.00	9,582.13	8,671.99	8,523.57	21.23	22.43	43.44	265.87	530.97	1,398.58	1,357.20	41.38	33.801			
9,700.00	9,682.13	8,700.00	8,539.12	21.43	22.48	42.60	288.96	534.03	1,475.45	1,433.85	41.60	35.466			
9,800.00	9,782.13	8,700.00	8,539.12	21.63	22.48	42.60	288.96	534.03	1,554.21	1,512.40	41.81	37.173			
9,900.00	9,882.13	8,722.69	8,550.90	21.83	22.51	41.92	308.21	536.34	1,634.75	1,592.69	42.06	38.864			
10,000.00	9,982.13	8,750.00	8,564.07	22.03	22.56	41.09	331.99	538.93	1,717.14	1,674.93	42.21	40.684			
10,100.00	10,082.13	8,750.00	8,564.07	22.23	22.56	41.09	331.99	538.93	1,800.60	1,758.19	42.42	42.451			
10,200.00	10,182.13	8,750.00	8,564.07	22.43	22.56	41.09	331.99	538.93	1,885.68	1,843.05	42.63	44.238			

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 312H (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:	312H (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	Warning	
10,300.00	10,282.13	8,772.86	8,574.23	22.63	22.60	40.40	352.37	540.93	1,971.62	1,928.79	42.83	46.032		
10,400.00	10,382.13	8,800.00	8,585.25	22.83	22.65	39.58	377.08	543.09	2,059.04	2,016.02	43.02	47.865		
10,500.00	10,482.13	8,800.00	8,585.25	23.04	22.65	39.58	377.08	543.09	2,146.86	2,103.63	43.23	49.663		
10,600.00	10,582.13	8,800.00	8,585.25	23.24	22.65	39.58	377.08	543.09	2,235.71	2,192.27	43.44	51.466		
10,700.00	10,682.13	8,800.00	8,585.25	23.44	22.65	39.58	377.08	543.09	2,325.46	2,281.81	43.65	53.273		
10,800.00	10,782.13	8,800.00	8,585.25	23.65	22.65	39.58	377.08	543.09	2,416.02	2,372.15	43.86	55.081		
10,900.00	10,882.13	8,824.60	8,594.23	23.85	22.70	38.84	399.91	544.86	2,506.69	2,462.63	44.06	56.887		
11,000.00	10,982.13	8,850.00	8,602.48	24.06	22.76	38.09	423.87	546.49	2,598.59	2,554.33	44.25	58.721		
11,100.00	11,082.13	8,850.00	8,602.48	24.26	22.76	38.09	423.87	546.49	2,690.46	2,645.99	44.47	60.506		
11,200.00	11,181.99	8,850.00	8,602.48	24.45	22.76	30.23	423.87	546.49	2,781.68	2,736.73	44.95	61.889		
11,300.00	11,279.85	8,850.00	8,602.48	24.57	22.76	22.88	423.87	546.49	2,867.05	2,822.49	44.57	64.330		
11,400.00	11,372.77	8,850.00	8,602.48	24.62	22.76	18.56	423.87	546.49	2,944.33	2,901.22	43.11	68.295		
11,500.00	11,457.92	8,876.79	8,610.05	24.63	22.83	15.77	449.53	547.98	3,011.17	2,970.37	40.80	73.808		
11,600.00	11,532.71	8,900.00	8,615.65	24.62	22.89	14.01	472.02	549.09	3,066.78	3,028.86	37.92	80.873		
11,700.00	11,594.87	8,900.00	8,615.65	24.62	22.89	12.90	472.02	549.09	3,109.61	3,074.81	34.80	89.353		
11,800.00	11,642.51	8,921.77	8,620.08	24.66	22.95	12.22	493.32	549.96	3,138.96	3,107.06	31.90	98.404		
11,900.00	11,674.19	8,950.00	8,624.64	24.79	23.04	11.90	521.16	550.87	3,154.40	3,124.63	29.77	105.955		
12,000.00	11,688.93	8,950.00	8,624.64	25.03	23.04	11.88	521.16	550.87	3,155.22	3,126.32	28.89	109.212		
12,100.00	11,690.00	8,950.00	8,624.64	25.38	23.04	11.94	521.16	550.87	3,145.75	3,116.68	29.07	108.210		
12,200.00	11,690.00	9,000.00	8,629.41	25.86	23.22	11.98	570.90	551.83	3,137.21	3,107.76	29.45	106.513		
12,300.00	11,690.00	9,000.00	8,629.41	26.45	23.22	11.98	570.90	551.83	3,131.45	3,101.77	29.68	105.502		
12,400.00	11,690.00	9,032.22	8,630.21	27.14	23.35	11.98	603.11	552.00	3,128.60	3,098.54	30.06	104.062		
12,464.96	11,690.00	9,032.22	8,630.21	27.66	23.35	11.98	603.11	552.00	3,127.97	3,097.72	30.25	103.900		
12,500.00	11,690.00	9,061.32	8,630.13	27.94	23.48	11.98	632.21	552.00	3,128.06	3,097.58	30.47	102.653		
12,600.00	11,690.00	9,161.32	8,629.87	28.84	24.03	11.98	732.21	552.00	3,128.31	3,097.10	31.21	100.228		
12,700.00	11,690.00	9,261.32	8,629.61	29.82	24.73	11.98	832.21	552.00	3,128.57	3,096.55	32.02	97.719		
12,800.00	11,690.00	9,361.32	8,629.35	30.87	25.56	11.98	932.20	552.00	3,128.83	3,095.94	32.88	95.152		
12,900.00	11,690.00	9,461.32	8,629.09	32.00	26.51	11.98	1,032.20	552.00	3,129.08	3,095.28	33.81	92.562		
13,000.00	11,690.00	9,561.32	8,628.83	33.18	27.55	11.98	1,132.20	552.00	3,129.34	3,094.56	34.78	89.975		
13,100.00	11,690.00	9,661.32	8,628.56	34.43	28.68	11.98	1,232.20	552.00	3,129.60	3,093.80	35.80	87.415		
13,200.00	11,690.00	9,761.31	8,628.30	35.72	29.88	11.98	1,332.20	552.00	3,129.86	3,092.99	36.87	84.897		
13,300.00	11,690.00	9,861.31	8,628.04	37.06	31.15	11.98	1,432.20	552.00	3,130.11	3,092.14	37.97	82.436		
13,400.00	11,690.00	9,961.31	8,627.78	38.44	32.47	11.98	1,532.20	552.00	3,130.37	3,091.26	39.11	80.041		
13,500.00	11,690.00	10,061.31	8,627.52	39.85	33.84	11.98	1,632.20	552.00	3,130.63	3,090.34	40.28	77.719		
13,600.00	11,690.00	10,161.31	8,627.25	41.30	35.25	11.97	1,732.20	552.00	3,130.88	3,089.40	41.48	75.474		
13,700.00	11,690.00	10,261.31	8,626.99	42.78	36.70	11.97	1,832.20	552.00	3,131.14	3,088.43	42.71	73.309		
13,800.00	11,690.00	10,361.31	8,626.73	44.28	38.18	11.97	1,932.20	552.00	3,131.40	3,087.43	43.96	71.225		
13,900.00	11,690.00	10,461.31	8,626.47	45.80	39.69	11.97	2,032.20	552.00	3,131.65	3,086.41	45.24	69.222		
14,000.00	11,690.00	10,561.31	8,626.21	47.35	41.23	11.97	2,132.20	552.00	3,131.91	3,085.37	46.54	67.298		
14,100.00	11,690.00	10,661.31	8,625.95	48.92	42.78	11.97	2,232.20	552.00	3,132.17	3,084.31	47.85	65.452		
14,200.00	11,690.00	10,761.31	8,625.68	50.50	44.36	11.97	2,332.20	552.00	3,132.42	3,083.24	49.19	63.682		
14,300.00	11,690.00	10,861.31	8,625.42	52.10	45.96	11.97	2,432.19	552.00	3,132.68	3,082.14	50.54	61.986		
14,400.00	11,690.00	10,961.31	8,625.16	53.72	47.58	11.97	2,532.19	552.00	3,132.94	3,081.03	51.90	60.360		
14,500.00	11,690.00	11,061.31	8,624.90	55.35	49.20	11.97	2,632.19	552.00	3,133.20	3,079.91	53.28	58.803		
14,600.00	11,690.00	11,161.31	8,624.64	56.98	50.85	11.97	2,732.19	552.00	3,133.45	3,078.78	54.68	57.310		
14,700.00	11,690.00	11,261.31	8,624.37	58.64	52.50	11.96	2,832.19	552.00	3,133.71	3,077.63	56.08	55.880		
14,800.00	11,690.00	11,361.31	8,624.11	60.30	54.17	11.96	2,932.19	552.00	3,133.97	3,076.47	57.49	54.509		
14,900.00	11,690.00	11,461.31	8,623.85	61.97	55.84	11.96	3,032.19	552.00	3,134.22	3,075.30	58.92	53.194		
15,000.00	11,690.00	11,561.31	8,623.59	63.65	57.53	11.96	3,132.19	552.00	3,134.48	3,074.13	60.36	51.934		
15,100.00	11,690.00	11,661.31	8,623.33	65.33	59.22	11.96	3,232.19	552.00	3,134.74	3,072.94	61.80	50.725		
15,200.00	11,690.00	11,761.31	8,623.07	67.03	60.92	11.96	3,332.19	552.00	3,134.99	3,071.74	63.25	49.564		
15,300.00	11,690.00	11,861.31	8,622.80	68.73	62.63	11.96	3,432.19	552.00	3,135.25	3,070.54	64.71	48.449		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 328H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,400.00	11,690.00	11,961.31	8,622.54	70.44	64.34	11.96	3,532.19	552.00	3,135.51	3,069.33	66.18	47.379		
15,500.00	11,690.00	12,061.31	8,622.28	72.15	66.06	11.96	3,632.19	552.00	3,135.77	3,068.11	67.65	46.350		
15,600.00	11,690.00	12,161.31	8,622.02	73.87	67.79	11.96	3,732.19	552.00	3,136.02	3,066.89	69.13	45.361		
15,700.00	11,690.00	12,261.31	8,621.76	75.59	69.52	11.96	3,832.18	552.00	3,136.28	3,065.66	70.62	44.410		
15,800.00	11,690.00	12,361.31	8,621.49	77.32	71.26	11.95	3,932.18	552.00	3,136.54	3,064.42	72.11	43.495		
15,900.00	11,690.00	12,461.31	8,621.23	79.05	73.00	11.95	4,032.18	552.00	3,136.79	3,063.18	73.61	42.613		
16,000.00	11,690.00	12,561.31	8,620.97	80.79	74.74	11.95	4,132.18	552.00	3,137.05	3,061.94	75.11	41.764		
16,100.00	11,690.00	12,661.31	8,620.71	82.53	76.49	11.95	4,232.18	552.00	3,137.31	3,060.69	76.62	40.946		
16,200.00	11,690.00	12,761.30	8,620.45	84.28	78.24	11.95	4,332.18	552.00	3,137.56	3,059.43	78.13	40.157		
16,300.00	11,690.00	12,861.30	8,620.19	86.02	80.00	11.95	4,432.18	552.00	3,137.82	3,058.17	79.65	39.396		
16,357.86	11,690.00	12,919.17	8,620.03	87.04	81.02	11.95	4,490.04	552.00	3,137.97	3,057.44	80.53	38.968		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 332H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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	-53.41	134.02	-180.52	224.83					
100.00	100.00	100.00	100.00	0.08	0.08	-53.41	134.02	-180.52	224.83	224.67	0.16	1.428	979	
200.00	200.00	200.00	200.00	0.30	0.30	-53.41	134.02	-180.52	224.83	224.22	0.61	370	477	
300.00	300.00	300.00	300.00	0.53	0.53	-53.41	134.02	-180.52	224.83	223.77	1.06	212	827	
400.00	400.00	400.00	400.00	0.75	0.75	-53.41	134.02	-180.52	224.83	223.32	1.51	149	297	
500.00	500.00	500.00	500.00	0.98	0.98	-53.41	134.02	-180.52	224.83	222.88	1.96	114	976	
600.00	600.00	600.00	600.00	1.20	1.20	-53.41	134.02	-180.52	224.83	222.43	2.40	93	485	
700.00	700.00	700.00	700.00	1.43	1.43	-53.41	134.02	-180.52	224.83	221.98	2.85	78	763	
800.00	800.00	800.00	800.00	1.65	1.65	-53.41	134.02	-180.52	224.83	221.53	3.30	68	047	
900.00	900.00	900.00	900.00	1.88	1.88	-53.41	134.02	-180.52	224.83	221.08	3.75	59	897	
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-53.41	134.02	-180.52	224.83	220.63	4.20	53	491	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-53.41	134.02	-180.52	224.83	220.18	4.65	48	323	
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-53.41	134.02	-180.52	224.83	219.73	5.10	44	066	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-53.41	134.02	-180.52	224.83	219.28	5.55	40	497	
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-53.41	134.02	-180.52	224.83	218.83	6.00	37	464	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-53.41	134.02	-180.52	224.83	218.38	6.45	34	853	
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-53.41	134.02	-180.52	224.83	217.93	6.90	32	583	
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-53.41	134.02	-180.52	224.83	217.48	7.35	30	590	
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-53.41	134.02	-180.52	224.83	217.03	7.80	28	827	
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-53.41	134.02	-180.52	224.83	216.58	8.25	27	256	
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-53.41	134.02	-180.52	224.83	216.13	8.70	25	847	
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-53.41	134.02	-180.52	224.83	215.68	9.15	24	577	
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-53.41	134.02	-180.52	224.83	215.23	9.60	23	426	
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-53.41	134.02	-180.52	224.83	214.78	10.05	22	378	
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-53.41	134.02	-180.52	224.83	214.33	10.50	21	419	
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-53.41	134.02	-180.52	224.83	213.88	10.95	20	540	
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-53.41	134.02	-180.52	224.83	213.43	11.40	19	730	
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-53.41	134.02	-180.52	224.83	212.99	11.85	18	981	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-53.41	134.02	-180.52	224.83	212.54	12.29	18	287	
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-53.41	134.02	-180.52	224.83	212.09	12.74	17	642	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-53.41	134.02	-180.52	224.83	211.64	13.19	17	041	
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-53.41	134.02	-180.52	224.83	211.19	13.64	16	479	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-53.41	134.02	-180.52	224.83	210.74	14.09	15	954	
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-53.41	134.02	-180.52	224.83	210.29	14.54	15	460	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-53.41	134.02	-180.52	224.83	209.84	14.99	14	997	
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-53.41	134.02	-180.52	224.83	209.39	15.44	14	560	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-53.41	134.02	-180.52	224.83	208.94	15.89	14	148	
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-53.41	134.02	-180.52	224.83	208.49	16.34	13	759	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-53.41	134.02	-180.52	224.83	208.04	16.79	13	391	
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-53.41	134.02	-180.52	224.83	207.59	17.24	13	042	
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-53.41	134.02	-180.52	224.83	207.14	17.69	12	710	
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-53.41	134.02	-180.52	224.83	206.69	18.14	12	395	
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-53.41	134.02	-180.52	224.83	206.24	18.59	12	095	
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-53.41	134.02	-180.52	224.83	205.79	19.04	11	810	CC
4,400.00	4,400.00	4,400.13	4,400.13	9.71	9.72	112.80	133.30	-181.02	225.14	205.71	19.43	11	587	ES
4,500.00	4,499.96	4,500.26	4,500.22	9.88	9.89	112.74	131.14	-182.51	226.06	206.29	19.77	11	434	
4,600.00	4,599.86	4,600.38	4,600.24	10.05	10.07	112.64	127.54	-184.99	227.61	207.49	20.11	11	316	
4,700.00	4,699.68	4,700.47	4,700.15	10.23	10.25	112.50	122.51	-188.47	229.77	209.31	20.46	11	229	
4,800.00	4,799.37	4,800.55	4,799.91	10.40	10.43	112.32	116.04	-192.94	232.55	211.73	20.82	11	172	
4,900.00	4,898.94	4,900.59	4,899.49	10.58	10.61	112.05	108.14	-198.39	235.79	214.61	21.18	11	132	
5,000.00	4,998.51	5,000.57	4,998.82	10.77	10.81	111.39	98.82	-204.83	239.04	217.48	21.56	11	088	
5,100.00	5,098.08	5,100.42	5,097.82	10.96	11.01	110.33	88.09	-212.24	242.34	220.39	21.95	11	042	

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 312H (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:	312H (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		
5,200.00	5,197.65	5,200.12	5,196.43	11.15	11.21	108.91	75.99	-220.60	245.76	223.41	22.35	10.997		
5,300.00	5,297.22	5,299.85	5,294.98	11.34	11.43	107.41	63.45	-229.26	249.36	226.80	22.76	10.956		
5,400.00	5,396.79	5,399.57	5,393.53	11.55	11.65	105.95	50.90	-237.92	253.12	229.94	23.18	10.918		
5,500.00	5,496.36	5,499.29	5,492.08	11.75	11.88	104.53	38.36	-246.58	257.05	233.44	23.62	10.885		
5,600.00	5,595.93	5,599.02	5,590.64	11.96	12.12	103.16	25.82	-255.25	261.13	237.07	24.06	10.855		
5,700.00	5,695.50	5,698.74	5,689.19	12.17	12.36	101.83	13.27	-263.91	265.36	240.85	24.51	10.828		
5,800.00	5,795.07	5,798.46	5,787.74	12.38	12.61	100.54	0.73	-272.57	269.72	244.76	24.96	10.804		
5,900.00	5,894.64	5,898.18	5,886.29	12.59	12.86	99.30	-11.81	-281.23	274.22	248.79	25.43	10.784		
6,000.00	5,994.21	5,997.91	5,984.84	12.81	13.12	98.09	-24.35	-289.89	278.84	252.94	25.90	10.767		
6,100.00	6,093.78	6,097.63	6,083.39	13.03	13.39	96.92	-36.90	-298.56	283.58	257.21	26.38	10.752		
6,200.00	6,193.35	6,197.35	6,181.94	13.26	13.65	95.79	-49.44	-307.22	288.44	261.58	26.86	10.740		
6,300.00	6,292.92	6,297.08	6,280.49	13.48	13.92	94.70	-61.98	-315.88	293.40	266.06	27.34	10.730		
6,400.00	6,392.49	6,396.80	6,379.04	13.71	14.20	93.65	-74.53	-324.54	298.47	270.64	27.84	10.723		
6,500.00	6,492.06	6,496.52	6,477.60	13.94	14.48	92.63	-87.07	-333.21	303.64	275.31	28.33	10.718		
6,600.00	6,591.63	6,596.25	6,576.15	14.17	14.76	91.65	-99.61	-341.87	308.89	280.06	28.83	10.715		
6,700.00	6,691.20	6,695.97	6,674.70	14.41	15.05	90.70	-112.16	-350.53	314.24	284.91	29.33	10.713		
6,800.00	6,790.77	6,795.69	6,773.25	14.64	15.34	89.78	-124.70	-359.19	319.67	289.83	29.84	10.714		
6,900.00	6,890.34	6,895.42	6,871.80	14.88	15.63	88.89	-137.24	-367.86	325.18	294.83	30.34	10.716		
7,000.00	6,989.91	6,995.14	6,970.35	15.12	15.93	88.03	-149.79	-376.52	330.76	299.90	30.85	10.720		
7,100.00	7,089.48	7,094.86	7,068.90	15.36	16.22	87.20	-162.33	-385.18	336.41	305.05	31.37	10.725		
7,200.00	7,189.05	7,194.59	7,167.45	15.60	16.52	86.40	-174.87	-393.84	342.14	310.26	31.88	10.732		
7,300.00	7,288.62	7,294.31	7,266.01	15.84	16.83	85.63	-187.42	-402.51	347.93	315.53	32.40	10.739		
7,400.00	7,388.19	7,394.03	7,364.56	16.09	17.13	84.88	-199.96	-411.17	353.78	320.86	32.92	10.748		
7,500.00	7,487.76	7,493.75	7,463.11	16.33	17.44	84.15	-212.50	-419.83	359.68	326.25	33.43	10.758		
7,600.00	7,587.33	7,593.48	7,561.66	16.58	17.75	83.45	-225.05	-428.49	365.65	331.69	33.96	10.768		
7,700.00	7,686.90	7,693.20	7,660.21	16.83	18.06	82.77	-237.59	-437.16	371.67	337.19	34.48	10.780		
7,800.00	7,786.47	7,792.92	7,758.76	17.08	18.37	82.11	-250.13	-445.82	377.73	342.73	35.00	10.792		
7,900.00	7,886.04	7,892.65	7,857.31	17.33	18.68	81.47	-262.68	-454.48	383.85	348.33	35.52	10.805		
8,000.00	7,985.61	7,992.37	7,955.86	17.58	19.00	80.86	-275.22	-463.14	390.01	353.96	36.05	10.819		
8,100.00	8,085.18	8,092.09	8,054.41	17.83	19.32	80.26	-287.76	-471.81	396.22	359.64	36.58	10.833		
8,200.00	8,184.75	8,191.82	8,152.97	18.08	19.64	79.68	-300.30	-480.47	402.47	365.36	37.10	10.848		
8,300.00	8,284.32	8,291.54	8,251.52	18.34	19.96	79.12	-312.85	-489.13	408.75	371.12	37.63	10.863		
8,400.00	8,383.89	8,391.26	8,350.07	18.59	20.28	78.57	-325.39	-497.79	415.08	376.92	38.16	10.878		
8,500.00	8,483.47	8,490.98	8,448.62	18.84	20.60	78.05	-337.93	-506.45	421.46	382.78	38.68	10.896		
8,600.00	8,583.11	8,593.30	8,549.76	19.08	20.92	77.48	-350.51	-515.14	427.84	388.66	39.18	10.920		
8,700.00	8,682.82	8,697.40	8,652.96	19.31	21.20	76.99	-363.18	-523.99	433.53	393.88	39.66	10.932		
8,800.00	8,782.60	8,801.67	8,756.54	19.54	21.47	76.61	-375.92	-532.99	438.44	398.31	40.12	10.928		
8,900.00	8,882.43	8,906.10	8,860.48	19.76	21.73	76.31	-388.72	-542.22	442.53	401.96	40.58	10.906		
9,000.00	8,982.31	9,010.63	8,964.69	19.98	21.97	76.10	-401.57	-551.68	445.82	404.79	41.03	10.867		
9,100.00	9,082.22	9,115.26	9,069.13	20.20	22.20	75.98	-414.47	-561.08	448.27	406.81	41.46	10.811		
9,200.00	9,182.17	9,219.94	9,173.71	20.42	22.42	75.95	-427.41	-570.62	449.90	408.00	41.89	10.740		
9,300.00	9,282.14	9,324.64	9,278.38	20.62	22.62	75.99	-440.39	-580.31	450.69	408.38	42.31	10.653		
9,400.00	9,382.13	9,428.39	9,382.13	20.83	22.81	76.12	-453.41	-590.14	450.67	407.95	42.71	10.551		
9,500.00	9,482.13	9,528.39	9,482.13	21.03	22.99	76.19	-466.47	-600.11	450.52	407.42	43.10	10.452		
9,546.15	9,528.27	9,574.54	9,528.27	21.12	23.07	76.20	-479.56	-610.22	450.51	407.23	43.28	10.408		
9,600.00	9,582.13	9,628.39	9,582.13	21.23	23.17	-89.99	-492.68	-620.46	450.52	407.03	43.49	10.360		
9,612.42	9,594.55	9,640.79	9,594.52	21.25	23.19	-89.92	-492.68	-620.46	450.52	406.98	43.54	10.348		
9,700.00	9,682.13	9,726.73	9,679.63	21.43	23.28	-88.49	-492.68	-620.46	450.68	406.81	43.87	10.273		
9,800.00	9,782.13	9,818.53	9,767.58	21.63	23.29	-85.20	-492.68	-620.46	452.34	408.11	44.23	10.227 SF		
9,900.00	9,882.13	9,900.00	9,841.30	21.83	23.24	-80.87	-492.68	-620.46	458.12	413.58	44.54	10.286		
10,000.00	9,982.13	9,970.91	9,900.92	22.03	23.16	-76.20	-492.68	-620.46	470.97	426.19	44.79	10.515		
10,100.00	10,082.13	10,030.74	9,947.22	22.23	23.07	-71.75	-492.68	-620.46	493.18	448.19	45.00	10.961		

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 312H (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:	312H (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		
10,200.00	10,182.13	10,081.05	9,982.93	22.43	22.99	-67.79	-213.88	-548.02	525.82	480.65	45.17	11.640		
10,300.00	10,282.13	10,123.34	10,010.45	22.63	22.91	-64.38	-181.78	-548.02	568.73	523.40	45.33	12.545		
10,400.00	10,382.13	10,150.00	10,026.55	22.83	22.86	-62.22	-160.53	-548.02	621.06	575.56	45.50	13.649		
10,500.00	10,482.13	10,200.00	10,054.01	23.04	22.77	-58.22	-118.77	-548.02	681.27	635.65	45.62	14.933		
10,600.00	10,582.13	10,215.18	10,061.62	23.24	22.74	-57.03	-105.63	-548.02	747.85	702.05	45.80	16.329		
10,700.00	10,682.13	10,250.00	10,077.73	23.44	22.67	-54.36	-74.77	-548.02	820.14	774.21	45.93	17.855		
10,800.00	10,782.13	10,250.00	10,077.73	23.65	22.67	-54.36	-74.77	-548.02	896.39	850.25	46.14	19.428		
10,900.00	10,882.13	10,273.75	10,087.63	23.85	22.63	-52.58	-53.18	-548.02	976.21	929.91	46.29	21.087		
11,000.00	10,982.13	10,300.00	10,097.52	24.06	22.58	-50.68	-28.87	-548.02	1,059.07	1,012.63	46.44	22.803		
11,100.00	11,082.13	10,300.00	10,097.52	24.26	22.58	-50.68	-28.87	-548.02	1,143.92	1,097.27	46.65	24.521		
11,200.00	11,181.99	10,300.00	10,097.52	24.45	22.58	-42.84	-28.87	-548.02	1,229.82	1,183.16	46.66	26.355		
11,300.00	11,279.85	10,331.02	10,107.76	24.57	22.52	-33.05	0.41	-548.02	1,310.38	1,264.55	45.83	28.591		
11,400.00	11,372.77	10,350.00	10,113.24	24.62	22.49	-27.09	18.58	-548.02	1,384.29	1,340.02	44.27	31.271		
11,500.00	11,457.92	10,371.82	10,118.79	24.63	22.45	-23.06	39.68	-548.02	1,449.80	1,407.72	42.08	34.453		
11,600.00	11,532.71	10,400.00	10,124.76	24.62	22.41	-20.29	67.22	-548.02	1,505.76	1,466.25	39.51	38.106		
11,700.00	11,594.87	10,419.94	10,128.16	24.62	22.37	-18.47	86.87	-548.02	1,551.17	1,514.26	36.91	42.028		
11,800.00	11,642.51	10,450.00	10,132.00	24.66	22.33	-17.23	116.68	-548.02	1,585.40	1,550.76	34.63	45.775		
11,900.00	11,674.19	10,472.13	10,133.82	24.79	22.30	-16.50	138.73	-548.02	1,607.84	1,574.72	33.12	48.552		
12,000.00	11,688.93	10,500.00	10,134.90	25.03	22.26	-16.18	166.58	-548.02	1,618.23	1,585.53	32.70	49.490		
12,100.00	11,690.00	10,573.66	10,134.96	25.38	22.28	-16.16	240.24	-548.02	1,618.98	1,585.84	33.13	48.861		
12,200.00	11,690.00	10,673.66	10,134.96	25.86	22.73	-16.16	340.24	-548.01	1,618.98	1,585.32	33.65	48.111		
12,300.00	11,690.00	10,773.66	10,134.96	26.45	23.32	-16.16	440.24	-548.01	1,618.97	1,584.73	34.25	47.272		
12,400.00	11,690.00	10,873.66	10,134.96	27.14	24.01	-16.16	540.24	-548.01	1,618.97	1,584.05	34.92	46.361		
12,500.00	11,690.00	10,973.66	10,134.96	27.94	24.80	-16.16	640.24	-548.01	1,618.97	1,583.30	35.67	45.392		
12,600.00	11,690.00	11,073.66	10,134.96	28.84	25.69	-16.16	740.24	-548.01	1,618.97	1,582.49	36.48	44.381		
12,700.00	11,690.00	11,173.66	10,134.96	29.82	26.67	-16.16	840.24	-548.01	1,618.96	1,581.61	37.35	43.340		
12,800.00	11,690.00	11,273.66	10,134.97	30.87	27.74	-16.16	940.24	-548.01	1,618.96	1,580.67	38.29	42.283		
12,900.00	11,690.00	11,373.66	10,134.97	32.00	28.87	-16.15	1,040.24	-548.01	1,618.96	1,579.68	39.28	41.218		
13,000.00	11,690.00	11,473.66	10,134.97	33.18	30.07	-16.15	1,140.24	-548.01	1,618.96	1,578.64	40.32	40.156		
13,100.00	11,690.00	11,573.66	10,134.97	34.43	31.33	-16.15	1,240.24	-548.01	1,618.96	1,577.55	41.40	39.104		
13,200.00	11,690.00	11,673.66	10,134.97	35.72	32.65	-16.15	1,340.24	-548.01	1,618.95	1,576.42	42.53	38.066		
13,300.00	11,690.00	11,773.66	10,134.97	37.06	34.01	-16.15	1,440.24	-548.01	1,618.95	1,575.25	43.70	37.049		
13,400.00	11,690.00	11,873.66	10,134.97	38.44	35.41	-16.15	1,540.24	-548.01	1,618.95	1,574.05	44.90	36.055		
13,500.00	11,690.00	11,973.66	10,134.97	39.85	36.84	-16.15	1,640.24	-548.01	1,618.95	1,572.81	46.14	35.088		
13,600.00	11,690.00	12,073.66	10,134.97	41.30	38.31	-16.15	1,740.24	-548.00	1,618.95	1,571.54	47.41	34.149		
13,700.00	11,690.00	12,173.66	10,134.97	42.78	39.81	-16.15	1,840.24	-548.00	1,618.94	1,570.24	48.71	33.239		
13,800.00	11,690.00	12,273.66	10,134.98	44.28	41.34	-16.15	1,940.24	-548.00	1,618.94	1,568.91	50.03	32.359		
13,900.00	11,690.00	12,373.66	10,134.98	45.80	42.89	-16.15	2,040.24	-548.00	1,618.94	1,567.56	51.38	31.510		
14,000.00	11,690.00	12,473.66	10,134.98	47.35	44.46	-16.15	2,140.24	-548.00	1,618.94	1,566.19	52.75	30.691		
14,100.00	11,690.00	12,573.66	10,134.98	48.92	46.04	-16.15	2,240.24	-548.00	1,618.93	1,564.79	54.14	29.902		
14,200.00	11,690.00	12,673.66	10,134.98	50.50	47.65	-16.15	2,340.24	-548.00	1,618.93	1,563.38	55.55	29.143		
14,300.00	11,690.00	12,773.66	10,134.98	52.10	49.27	-16.15	2,440.24	-548.00	1,618.93	1,561.95	56.98	28.412		
14,400.00	11,690.00	12,873.66	10,134.98	53.72	50.90	-16.15	2,540.24	-548.00	1,618.93	1,560.50	58.43	27.710		
14,500.00	11,690.00	12,973.66	10,134.98	55.35	52.55	-16.15	2,640.24	-548.00	1,618.93	1,559.04	59.89	27.034		
14,600.00	11,690.00	13,073.66	10,134.98	56.98	54.21	-16.15	2,740.24	-548.00	1,618.92	1,557.56	61.36	26.384		
14,700.00	11,690.00	13,173.66	10,134.98	58.64	55.88	-16.15	2,840.24	-548.00	1,618.92	1,556.07	62.85	25.759		
14,800.00	11,690.00	13,273.66	10,134.99	60.30	57.56	-16.15	2,940.24	-548.00	1,618.92	1,554.57	64.35	25.159		
14,900.00	11,690.00	13,373.66	10,134.99	61.97	59.24	-16.15	3,040.24	-547.99	1,618.92	1,553.06	65.86	24.581		
15,000.00	11,690.00	13,473.66	10,134.99	63.65	60.94	-16.15	3,140.24	-547.99	1,618.91	1,551.53	67.38	24.026		
15,100.00	11,690.00	13,573.66	10,134.99	65.33	62.64	-16.15	3,240.24	-547.99	1,618.91	1,550.00	68.92	23.491		
15,200.00	11,690.00	13,673.66	10,134.99	67.03	64.35	-16.15	3,340.24	-547.99	1,618.91	1,548.45	70.46	22.977		
15,300.00	11,690.00	13,773.66	10,134.99	68.73	66.06	-16.15	3,440.24	-547.99	1,618.91	1,546.90	72.01	22.482		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 332H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,400.00	11,690.00	13,873.66	10,134.99	70.44	67.79	-16.15	3,540.24	-547.99	1,618.91	1,545.34	73.57	22.006		
15,500.00	11,690.00	13,973.66	10,134.99	72.15	69.51	-16.15	3,640.24	-547.99	1,618.90	1,543.77	75.13	21.547		
15,600.00	11,690.00	14,073.66	10,134.99	73.87	71.24	-16.15	3,740.24	-547.99	1,618.90	1,542.19	76.71	21.105		
15,700.00	11,690.00	14,173.66	10,134.99	75.59	72.98	-16.15	3,840.24	-547.99	1,618.90	1,540.61	78.29	20.679		
15,800.00	11,690.00	14,273.66	10,134.99	77.32	74.72	-16.15	3,940.24	-547.99	1,618.90	1,539.02	79.88	20.268		
15,900.00	11,690.00	14,373.66	10,135.00	79.05	76.47	-16.15	4,040.24	-547.99	1,618.90	1,537.43	81.47	19.871		
16,000.00	11,690.00	14,473.66	10,135.00	80.79	78.21	-16.15	4,140.24	-547.99	1,618.89	1,535.82	83.07	19.489		
16,100.00	11,690.00	14,573.66	10,135.00	82.53	79.97	-16.15	4,240.24	-547.99	1,618.89	1,534.22	84.67	19.119		
16,200.00	11,690.00	14,673.66	10,135.00	84.28	81.72	-16.15	4,340.24	-547.99	1,618.89	1,532.61	86.28	18.763		
16,300.00	11,690.00	14,773.66	10,135.00	86.02	83.48	-16.15	4,440.24	-547.98	1,618.89	1,530.99	87.90	18.418		
16,343.66	11,690.00	14,817.32	10,135.00	86.79	84.25	-16.15	4,483.90	-547.98	1,618.89	1,530.28	88.60	18.271		
16,357.86	11,690.00	14,829.84	10,135.00	87.04	84.47	-16.15	4,496.42	-547.98	1,618.89	1,530.07	88.82	18.227		

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 312H (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:	312H (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	-48.63	159.02	-180.59	240.63					
100.00	100.00	100.00	100.00	0.08	0.08	-48.63	159.02	-180.59	240.63	240.47	0.16	1,529.368		
200.00	200.00	200.00	200.00	0.30	0.30	-48.63	159.02	-180.59	240.63	240.02	0.61	396.503		
300.00	300.00	300.00	300.00	0.53	0.53	-48.63	159.02	-180.59	240.63	239.57	1.06	227.779		
400.00	400.00	400.00	400.00	0.75	0.75	-48.63	159.02	-180.59	240.63	239.12	1.51	159.785		
500.00	500.00	500.00	500.00	0.98	0.98	-48.63	159.02	-180.59	240.63	238.67	1.96	123.053		
600.00	600.00	600.00	600.00	1.20	1.20	-48.63	159.02	-180.59	240.63	238.22	2.40	100.052		
700.00	700.00	700.00	700.00	1.43	1.43	-48.63	159.02	-180.59	240.63	237.77	2.85	84.296		
800.00	800.00	800.00	800.00	1.65	1.65	-48.63	159.02	-180.59	240.63	237.32	3.30	72.827		
900.00	900.00	900.00	900.00	1.88	1.88	-48.63	159.02	-180.59	240.63	236.87	3.75	64.105		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-48.63	159.02	-180.59	240.63	236.42	4.20	57.249		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-48.63	159.02	-180.59	240.63	235.97	4.65	51.718		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-48.63	159.02	-180.59	240.63	235.52	5.10	47.161		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-48.63	159.02	-180.59	240.63	235.07	5.55	43.342		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-48.63	159.02	-180.59	240.63	234.62	6.00	40.096		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-48.63	159.02	-180.59	240.63	234.17	6.45	37.302		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-48.63	159.02	-180.59	240.63	233.73	6.90	34.872		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-48.63	159.02	-180.59	240.63	233.28	7.35	32.739		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-48.63	159.02	-180.59	240.63	232.83	7.80	30.852		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-48.63	159.02	-180.59	240.63	232.38	8.25	29.171		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-48.63	159.02	-180.59	240.63	231.93	8.70	27.663		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-48.63	159.02	-180.59	240.63	231.48	9.15	26.304		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-48.63	159.02	-180.59	240.63	231.03	9.60	25.072		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-48.63	159.02	-180.59	240.63	230.58	10.05	23.950		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-48.63	159.02	-180.59	240.63	230.13	10.50	22.924		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-48.63	159.02	-180.59	240.63	229.68	10.95	21.983		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-48.63	159.02	-180.59	240.63	229.23	11.40	21.116		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-48.63	159.02	-180.59	240.63	228.78	11.85	20.314		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-48.63	159.02	-180.59	240.63	228.33	12.29	19.571		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-48.63	159.02	-180.59	240.63	227.88	12.74	18.881		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-48.63	159.02	-180.59	240.63	227.43	13.19	18.238		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-48.63	159.02	-180.59	240.63	226.98	13.64	17.637		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-48.63	159.02	-180.59	240.63	226.53	14.09	17.074		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-48.63	159.02	-180.59	240.63	226.08	14.54	16.547		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-48.63	159.02	-180.59	240.63	225.63	14.99	16.050		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-48.63	159.02	-180.59	240.63	225.18	15.44	15.583		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-48.63	159.02	-180.59	240.63	224.73	15.89	15.142		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-48.63	159.02	-180.59	240.63	224.28	16.34	14.726		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-48.63	159.02	-180.59	240.63	223.84	16.79	14.331		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-48.63	159.02	-180.59	240.63	223.39	17.24	13.958		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-48.63	159.02	-180.59	240.63	222.94	17.69	13.603		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-48.63	159.02	-180.59	240.63	222.49	18.14	13.266		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-48.63	159.02	-180.59	240.63	222.04	18.59	12.945		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-48.63	159.02	-180.59	240.63	221.59	19.04	12.639		
4,400.00	4,400.00	4,404.35	4,404.35	9.71	9.73	117.77	158.32	-179.94	240.12	220.68	19.44	12.352		
4,500.00	4,499.96	4,508.66	4,508.61	9.88	9.91	118.30	156.24	-178.01	238.63	218.85	19.79	12.059		
4,600.00	4,599.86	4,612.87	4,612.72	10.05	10.10	119.19	152.76	-174.78	236.19	216.05	20.14	11.727		
4,700.00	4,699.68	4,716.95	4,716.58	10.23	10.29	120.46	147.91	-170.27	232.87	212.37	20.50	11.362		
4,800.00	4,799.37	4,820.84	4,820.13	10.40	10.48	122.15	141.69	-164.49	228.76	207.91	20.85	10.971		
4,900.00	4,898.94	4,924.52	4,923.29	10.58	10.68	124.17	134.11	-157.44	223.78	202.56	21.22	10.547		
5,000.00	4,998.51	5,027.98	5,026.02	10.77	10.89	126.31	125.19	-149.15	217.31	195.72	21.59	10.065		
5,100.00	5,098.08	5,131.15	5,128.24	10.96	11.10	128.61	114.94	-139.62	209.35	187.38	21.97	9.529		

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 312H (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:	312H (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				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		
5,200.00	5,197.65	5,233.98	5,229.85	11.15	11.32	131.16	103.38	-128.89	199.97	177.61	22.35	8.945		
5,300.00	5,297.22	5,336.39	5,330.75	11.34	11.56	134.04	90.54	-116.96	189.23	166.49	22.74	8.320		
5,400.00	5,396.79	5,436.11	5,428.77	11.55	11.80	137.28	77.10	-104.46	177.73	154.59	23.13	7.683		
5,500.00	5,496.36	5,534.91	5,525.86	11.75	12.05	140.92	63.72	-92.03	166.79	143.26	23.53	7.089		
5,600.00	5,595.93	5,633.71	5,622.96	11.96	12.30	145.05	50.35	-79.60	156.62	132.68	23.93	6.544		
5,700.00	5,695.50	5,732.50	5,720.05	12.17	12.57	149.71	36.98	-67.18	147.37	123.02	24.35	6.052		
5,800.00	5,795.07	5,831.30	5,817.15	12.38	12.84	154.94	23.61	-54.75	139.23	114.44	24.79	5.617		
5,900.00	5,894.64	5,930.09	5,914.24	12.59	13.12	160.76	10.23	-42.32	132.40	107.16	25.24	5.245		
6,000.00	5,994.21	6,028.89	6,011.33	12.81	13.40	167.13	-3.14	-29.89	127.11	101.38	25.72	4.941		
6,100.00	6,093.78	6,127.69	6,108.43	13.03	13.69	173.94	-16.51	-17.47	123.53	97.29	26.24	4.708		
6,200.00	6,193.35	6,226.48	6,205.52	13.26	13.99	-178.96	-29.89	-5.04	121.83	95.05	26.77	4.550		
6,237.20	6,230.39	6,263.23	6,241.64	13.34	14.10	-176.28	-34.86	-0.42	121.69	94.71	26.98	4.510	CC, ES	
6,300.00	6,292.92	6,325.28	6,302.62	13.48	14.29	-171.77	-43.26	7.39	122.08	94.74	27.34	4.466		
6,400.00	6,392.49	6,424.07	6,399.71	13.71	14.60	-164.72	-56.63	19.82	124.27	96.36	27.91	4.452	SF	
6,500.00	6,492.06	6,522.87	6,496.81	13.94	14.91	-158.01	-70.00	32.24	128.31	99.81	28.49	4.503		
6,600.00	6,591.63	6,621.66	6,593.90	14.17	15.23	-151.78	-83.38	44.67	134.01	104.95	29.07	4.610		
6,700.00	6,691.20	6,720.46	6,691.00	14.41	15.55	-146.11	-96.75	57.10	141.20	111.56	29.64	4.764		
6,800.00	6,790.77	6,819.26	6,788.09	14.64	15.87	-141.02	-110.12	69.53	149.64	119.45	30.19	4.956		
6,900.00	6,890.34	6,918.05	6,885.19	14.88	16.20	-136.50	-123.49	81.95	159.14	128.40	30.74	5.177		
7,000.00	6,989.91	7,016.85	6,982.28	15.12	16.53	-132.51	-136.87	94.38	169.52	138.25	31.28	5.420		
7,100.00	7,089.48	7,115.64	7,079.37	15.36	16.87	-128.98	-150.24	106.81	180.64	148.83	31.81	5.679		
7,200.00	7,189.05	7,214.44	7,176.47	15.60	17.21	-125.87	-163.61	119.24	192.35	160.02	32.33	5.949		
7,300.00	7,288.62	7,313.24	7,273.56	15.84	17.55	-123.12	-176.99	131.66	204.57	171.72	32.85	6.227		
7,400.00	7,388.19	7,412.03	7,370.66	16.09	17.89	-120.68	-190.36	144.09	217.20	183.83	33.37	6.508		
7,500.00	7,487.76	7,510.83	7,467.75	16.33	18.24	-118.51	-203.73	156.52	230.18	196.29	33.89	6.792		
7,600.00	7,587.33	7,609.62	7,564.85	16.58	18.59	-116.57	-217.10	168.95	243.45	209.04	34.41	7.075		
7,700.00	7,686.90	7,708.42	7,661.94	16.83	18.94	-114.84	-230.48	181.37	256.97	222.04	34.93	7.357		
7,800.00	7,786.47	7,807.21	7,759.04	17.08	19.29	-113.28	-243.85	193.80	270.69	235.25	35.45	7.637		
7,900.00	7,886.04	7,906.01	7,856.13	17.33	19.65	-111.87	-257.22	206.23	284.60	248.63	35.97	7.913		
8,000.00	7,985.61	8,004.81	7,953.22	17.58	20.00	-110.59	-270.60	218.66	298.66	262.17	36.49	8.185		
8,100.00	8,085.18	8,103.60	8,050.32	17.83	20.36	-109.42	-283.97	231.08	312.85	275.84	37.01	8.453		
8,200.00	8,184.75	8,202.40	8,147.41	18.08	20.72	-108.36	-297.34	243.51	327.16	289.63	37.53	8.717		
8,300.00	8,284.32	8,301.19	8,244.51	18.34	21.09	-107.38	-310.71	255.94	341.57	303.51	38.06	8.975		
8,400.00	8,383.89	8,401.19	8,342.80	18.59	21.44	-106.49	-324.19	268.47	356.02	317.44	38.58	9.228		
8,500.00	8,483.47	8,504.40	8,444.49	18.84	21.76	-105.82	-337.10	280.46	369.66	330.57	39.08	9.458		
8,600.00	8,583.11	8,608.03	8,546.90	19.08	22.06	-105.33	-348.71	291.25	381.97	342.40	39.57	9.653		
8,700.00	8,682.82	8,712.04	8,649.96	19.31	22.35	-104.94	-359.00	300.81	392.89	352.84	40.05	9.810		
8,800.00	8,782.60	8,816.39	8,753.58	19.54	22.63	-104.64	-367.94	309.12	402.40	361.88	40.52	9.931		
8,900.00	8,882.43	8,921.01	8,857.70	19.76	22.89	-104.43	-375.52	316.16	410.49	369.51	40.98	10.016		
9,000.00	8,982.31	9,025.88	8,962.22	19.98	23.13	-104.29	-381.71	321.92	417.15	375.71	41.44	10.067		
9,100.00	9,082.22	9,130.93	9,067.06	20.20	23.36	-104.22	-386.51	326.38	422.36	380.48	41.88	10.086		
9,200.00	9,182.17	9,236.11	9,172.14	20.42	23.58	-104.22	-389.91	329.53	426.12	383.81	42.31	10.072		
9,300.00	9,282.14	9,341.38	9,277.37	20.62	23.78	-104.28	-391.89	331.38	428.43	385.70	42.73	10.027		
9,400.00	9,382.13	9,446.14	9,382.13	20.83	23.96	-104.41	-392.46	331.91	429.29	386.16	43.13	9.952		
9,500.00	9,482.13	9,546.14	9,482.13	21.03	24.14	-104.49	-392.46	331.91	429.44	385.91	43.53	9.866		
9,600.00	9,582.13	9,646.04	9,582.03	21.23	24.31	89.27	-392.37	331.91	429.44	385.53	43.91	9.780		
9,700.00	9,682.13	9,743.83	9,679.18	21.43	24.43	87.93	-382.35	331.91	429.70	385.40	44.29	9.701		
9,800.00	9,782.13	9,835.69	9,767.66	21.63	24.44	84.70	-358.02	331.91	431.49	386.84	44.66	9.663		
9,900.00	9,882.13	9,918.03	9,842.77	21.83	24.40	80.30	-324.44	331.91	437.41	392.44	44.97	9.726		
10,000.00	9,982.13	9,989.44	9,903.44	22.03	24.32	75.51	-286.87	331.91	450.44	405.20	45.24	9.957		
10,100.00	10,082.13	10,050.00	9,950.90	22.23	24.23	70.92	-249.29	331.91	472.95	427.49	45.46	10.404		
10,200.00	10,182.13	10,100.00	9,986.91	22.43	24.14	66.90	-214.63	331.91	506.03	460.38	45.64	11.086		

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 312H (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:	312H (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			
10,300.00	10,282.13	10,150.00	10,019.77	22.63	24.04	62.78	-176.97	331.91	549.55	503.75	45.80	11.998			
10,400.00	10,382.13	10,180.79	10,038.32	22.83	23.97	60.25	-152.40	331.91	602.36	556.39	45.97	13.104			
10,500.00	10,482.13	10,200.00	10,049.22	23.04	23.94	58.68	-136.58	331.91	663.37	617.22	46.15	14.375			
10,600.00	10,582.13	10,250.00	10,075.04	23.24	23.83	54.70	-93.78	331.91	730.74	684.48	46.26	15.795			
10,700.00	10,682.13	10,250.00	10,075.04	23.44	23.83	54.70	-93.78	331.91	803.37	756.89	46.47	17.287			
10,800.00	10,782.13	10,280.57	10,088.96	23.65	23.76	52.35	-66.56	331.91	880.13	833.51	46.62	18.880			
10,900.00	10,882.13	10,300.00	10,097.03	23.85	23.72	50.90	-48.90	331.92	960.48	913.70	46.79	20.529			
11,000.00	10,982.13	10,300.00	10,097.03	24.06	23.72	50.90	-48.90	331.92	1,043.81	996.82	47.00	22.210			
11,100.00	11,082.13	10,326.46	10,107.06	24.26	23.66	48.99	-24.42	331.92	1,128.98	1,081.83	47.15	23.945			
11,200.00	11,181.99	10,350.00	10,115.03	24.45	23.62	40.08	-2.26	331.92	1,215.06	1,167.89	47.17	25.758			
11,300.00	11,279.85	10,350.00	10,115.03	24.57	23.62	31.99	-2.26	331.92	1,295.98	1,249.49	46.49	27.874			
11,400.00	11,372.77	10,375.50	10,122.62	24.62	23.56	26.02	22.08	331.92	1,369.91	1,324.99	44.91	30.501			
11,500.00	11,457.92	10,400.00	10,128.89	24.63	23.51	22.11	45.76	331.92	1,435.41	1,392.73	42.68	33.634			
11,600.00	11,532.71	10,420.79	10,133.41	24.62	23.47	19.52	66.05	331.92	1,491.25	1,451.21	40.03	37.250			
11,700.00	11,594.87	10,450.00	10,138.51	24.62	23.42	17.71	94.81	331.92	1,536.56	1,499.26	37.30	41.198			
11,800.00	11,642.51	10,471.60	10,141.34	24.66	23.37	16.56	116.22	331.92	1,570.56	1,535.67	34.89	45.016			
11,900.00	11,674.19	10,500.00	10,143.83	24.79	23.33	15.85	144.51	331.92	1,592.81	1,559.56	33.25	47.908			
12,000.00	11,688.93	10,536.00	10,144.96	25.03	23.27	15.55	180.49	331.92	1,603.09	1,570.33	32.76	48.927			
12,100.00	11,690.00	10,595.74	10,144.96	25.38	23.20	15.53	240.22	331.92	1,603.61	1,570.46	33.15	48.376			
12,200.00	11,690.00	10,695.74	10,144.96	25.86	23.27	15.53	340.22	331.92	1,603.61	1,569.95	33.66	47.637			
12,300.00	11,690.00	10,795.74	10,144.96	26.45	23.75	15.53	440.22	331.92	1,603.61	1,569.36	34.26	46.812			
12,400.00	11,690.00	10,895.74	10,144.96	27.14	24.41	15.53	540.22	331.93	1,603.61	1,568.69	34.92	45.917			
12,500.00	11,690.00	10,995.74	10,144.96	27.94	25.19	15.53	640.22	331.93	1,603.61	1,567.95	35.66	44.967			
12,600.00	11,690.00	11,095.74	10,144.96	28.84	26.06	15.53	740.22	331.93	1,603.62	1,567.15	36.47	43.976			
12,700.00	11,690.00	11,195.74	10,144.96	29.82	27.02	15.53	840.22	331.93	1,603.62	1,566.28	37.33	42.956			
12,800.00	11,690.00	11,295.74	10,144.97	30.87	28.06	15.53	940.22	331.93	1,603.62	1,565.36	38.25	41.920			
12,900.00	11,690.00	11,395.74	10,144.97	32.00	29.17	15.54	1,040.22	331.94	1,603.62	1,564.39	39.23	40.877			
13,000.00	11,690.00	11,495.74	10,144.97	33.18	30.35	15.54	1,140.22	331.94	1,603.62	1,563.36	40.26	39.836			
13,100.00	11,690.00	11,595.74	10,144.97	34.43	31.59	15.54	1,240.22	331.94	1,603.62	1,562.29	41.33	38.803			
13,200.00	11,690.00	11,695.74	10,144.97	35.72	32.88	15.54	1,340.22	331.94	1,603.62	1,561.18	42.44	37.785			
13,300.00	11,690.00	11,795.74	10,144.97	37.06	34.22	15.54	1,440.22	331.94	1,603.62	1,560.03	43.59	36.786			
13,400.00	11,690.00	11,895.74	10,144.97	38.44	35.60	15.54	1,540.22	331.95	1,603.62	1,558.84	44.78	35.810			
13,500.00	11,690.00	11,995.74	10,144.97	39.85	37.02	15.54	1,640.22	331.95	1,603.62	1,557.62	46.00	34.859			
13,600.00	11,690.00	12,095.74	10,144.97	41.30	38.47	15.54	1,740.22	331.95	1,603.62	1,556.37	47.26	33.935			
13,700.00	11,690.00	12,195.74	10,144.97	42.78	39.95	15.54	1,840.22	331.95	1,603.62	1,555.09	48.54	33.040			
13,800.00	11,690.00	12,295.74	10,144.98	44.28	41.45	15.54	1,940.22	331.95	1,603.62	1,553.78	49.84	32.173			
13,900.00	11,690.00	12,395.74	10,144.98	45.80	42.99	15.54	2,040.22	331.96	1,603.62	1,552.45	51.17	31.336			
14,000.00	11,690.00	12,495.74	10,144.98	47.35	44.54	15.54	2,140.22	331.96	1,603.62	1,551.10	52.53	30.529			
14,100.00	11,690.00	12,595.74	10,144.98	48.92	46.11	15.54	2,240.22	331.96	1,603.63	1,549.72	53.90	29.750			
14,200.00	11,690.00	12,695.74	10,144.98	50.50	47.70	15.54	2,340.22	331.96	1,603.63	1,548.33	55.30	29.000			
14,300.00	11,690.00	12,795.74	10,144.98	52.10	49.31	15.54	2,440.22	331.96	1,603.63	1,546.92	56.71	28.279			
14,400.00	11,690.00	12,895.74	10,144.98	53.72	50.93	15.54	2,540.22	331.97	1,603.63	1,545.49	58.14	27.584			
14,500.00	11,690.00	12,995.74	10,144.98	55.35	52.57	15.54	2,640.22	331.97	1,603.63	1,544.05	59.58	26.916			
14,600.00	11,690.00	13,095.74	10,144.98	56.98	54.22	15.54	2,740.22	331.97	1,603.63	1,542.59	61.04	26.273			
14,700.00	11,690.00	13,195.74	10,144.98	58.64	55.87	15.54	2,840.22	331.97	1,603.63	1,541.12	62.51	25.655			
14,800.00	11,690.00	13,295.74	10,144.98	60.30	57.54	15.54	2,940.22	331.97	1,603.63	1,539.64	63.99	25.060			
14,900.00	11,690.00	13,395.74	10,144.99	61.97	59.22	15.54	3,040.22	331.98	1,603.63	1,538.14	65.49	24.488			
15,000.00	11,690.00	13,495.74	10,144.99	63.65	60.90	15.54	3,140.22	331.98	1,603.63	1,536.64	66.99	23.938			
15,100.00	11,690.00	13,595.74	10,144.99	65.33	62.60	15.54	3,240.22	331.98	1,603.63	1,535.13	68.51	23.408			
15,200.00	11,690.00	13,695.74	10,144.99	67.03	64.30	15.54	3,340.22	331.98	1,603.63	1,533.60	70.03	22.899			
15,300.00	11,690.00	13,795.74	10,144.99	68.73	66.01	15.54	3,440.22	331.98	1,603.63	1,532.07	71.57	22.408			
15,400.00	11,690.00	13,895.74	10,144.99	70.44	67.72	15.54	3,540.22	331.99	1,603.63	1,530.53	73.11	21.935			

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 333H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,500.00	11,690.00	13,995.74	10,144.99	72.15	69.44	15.54	3,640.22	331.99	1,603.63	1,528.98	74.66	21.480		
15,600.00	11,690.00	14,095.74	10,144.99	73.87	71.16	15.54	3,740.22	331.99	1,603.64	1,527.42	76.21	21.041		
15,700.00	11,690.00	14,195.74	10,144.99	75.59	72.89	15.54	3,840.22	331.99	1,603.64	1,525.86	77.78	20.618		
15,800.00	11,690.00	14,295.74	10,144.99	77.32	74.63	15.54	3,940.22	331.99	1,603.64	1,524.29	79.35	20.210		
15,900.00	11,690.00	14,395.74	10,145.00	79.05	76.37	15.54	4,040.22	332.00	1,603.64	1,522.71	80.93	19.816		
16,000.00	11,690.00	14,495.74	10,145.00	80.79	78.11	15.54	4,140.22	332.00	1,603.64	1,521.13	82.51	19.436		
16,100.00	11,690.00	14,595.74	10,145.00	82.53	79.86	15.54	4,240.22	332.00	1,603.64	1,519.54	84.10	19.069		
16,200.00	11,690.00	14,695.74	10,145.00	84.28	81.61	15.54	4,340.22	332.00	1,603.64	1,517.95	85.69	18.715		
16,300.00	11,690.00	14,795.74	10,145.00	86.02	83.36	15.54	4,440.22	332.00	1,603.64	1,516.35	87.29	18.372		
16,357.86	11,690.00	14,853.60	10,145.00	87.04	84.37	15.54	4,498.09	332.00	1,603.64	1,515.43	88.21	18.179		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 451H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	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	-0.18	99.97	-0.31	99.97					
100.00	100.00	100.00	100.00	0.08	0.08	-0.18	99.97	-0.31	99.97	99.81	0.16	635.393		
200.00	200.00	200.00	200.00	0.30	0.30	-0.18	99.97	-0.31	99.97	99.36	0.61	164.732		
300.00	300.00	300.00	300.00	0.53	0.53	-0.18	99.97	-0.31	99.97	98.91	1.08	94.633		
400.00	400.00	400.00	400.00	0.75	0.75	-0.18	99.97	-0.31	99.97	98.46	1.51	66.384		
500.00	500.00	500.00	500.00	0.98	0.98	-0.18	99.97	-0.31	99.97	98.02	1.96	51.124		
600.00	600.00	600.00	600.00	1.20	1.20	-0.18	99.97	-0.31	99.97	97.57	2.40	41.568		
700.00	700.00	700.00	700.00	1.43	1.43	-0.18	99.97	-0.31	99.97	97.12	2.85	35.022		
800.00	800.00	800.00	800.00	1.65	1.65	-0.18	99.97	-0.31	99.97	96.67	3.30	30.257		
900.00	900.00	900.00	900.00	1.88	1.88	-0.18	99.97	-0.31	99.97	96.22	3.75	26.633		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-0.18	99.97	-0.31	99.97	95.77	4.20	23.785		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-0.18	99.97	-0.31	99.97	95.32	4.65	21.487		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-0.18	99.97	-0.31	99.97	94.87	5.10	19.594		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-0.18	99.97	-0.31	99.97	94.42	5.55	18.007		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-0.18	99.97	-0.31	99.97	93.97	6.00	16.658		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-0.18	99.97	-0.31	99.97	93.52	6.45	15.497		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-0.18	99.97	-0.31	99.97	93.07	6.90	14.488		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-0.18	99.97	-0.31	99.97	92.62	7.35	13.602		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-0.18	99.97	-0.31	99.97	92.17	7.80	12.818		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-0.18	99.97	-0.31	99.97	91.72	8.25	12.119		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-0.18	99.97	-0.31	99.97	91.27	8.70	11.493		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-0.18	99.97	-0.31	99.97	90.82	9.15	10.928		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-0.18	99.97	-0.31	99.97	90.37	9.60	10.416		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-0.18	99.97	-0.31	99.97	89.92	10.05	9.950		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-0.18	99.97	-0.31	99.97	89.47	10.50	9.524		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-0.18	99.97	-0.31	99.97	89.02	10.95	9.133		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-0.18	99.97	-0.31	99.97	88.57	11.40	8.773		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-0.18	99.97	-0.31	99.97	88.13	11.85	8.440		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-0.18	99.97	-0.31	99.97	87.68	12.29	8.131		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-0.18	99.97	-0.31	99.97	87.23	12.74	7.844		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-0.18	99.97	-0.31	99.97	86.78	13.19	7.577		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-0.18	99.97	-0.31	99.97	86.33	13.64	7.327		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-0.18	99.97	-0.31	99.97	85.88	14.09	7.094		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-0.18	99.97	-0.31	99.97	85.43	14.54	6.874		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-0.18	99.97	-0.31	99.97	84.98	14.99	6.668		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-0.18	99.97	-0.31	99.97	84.53	15.44	6.474		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-0.18	99.97	-0.31	99.97	84.08	15.89	6.291		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-0.18	99.97	-0.31	99.97	83.63	16.34	6.118		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-0.18	99.97	-0.31	99.97	83.18	16.79	5.954		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-0.18	99.97	-0.31	99.97	82.73	17.24	5.799		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-0.18	99.97	-0.31	99.97	82.28	17.69	5.652		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-0.18	99.97	-0.31	99.97	81.83	18.14	5.511		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-0.18	99.97	-0.31	99.97	81.38	18.59	5.378		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-0.18	99.97	-0.31	99.97	80.93	19.04	5.251 CC, ES		
4,400.00	4,400.00	4,400.60	4,400.59	9.71	9.73	166.64	99.66	0.52	100.52	81.08	19.44	5.171		
4,500.00	4,499.96	4,501.11	4,501.07	9.88	9.91	168.38	98.75	3.00	102.22	82.43	19.79	5.166 SF		
4,600.00	4,599.86	4,601.47	4,601.33	10.05	10.11	171.13	97.23	7.13	105.25	85.12	20.13	5.227		
4,700.00	4,699.68	4,701.57	4,701.25	10.23	10.30	174.71	95.11	12.89	109.88	89.39	20.48	5.365		
4,800.00	4,799.37	4,801.36	4,800.72	10.40	10.50	178.86	92.39	20.26	116.39	95.56	20.83	5.589		
4,900.00	4,898.94	4,900.77	4,899.67	10.58	10.70	-176.69	89.09	29.22	124.67	103.48	21.19	5.882		
5,000.00	4,998.51	4,999.85	4,998.11	10.77	10.91	-172.09	85.21	39.74	133.73	112.15	21.58	6.197		
5,100.00	5,098.08	5,098.54	5,095.96	10.96	11.12	-167.43	80.76	51.82	143.70	121.73	21.98	6.539		

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 312H (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:	312H (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		
5,200.00	5,197.65	5,196.80	5,193.15	11.15	11.34	-162.79	75.75	65.41	154.82	132.44	22.38	6.918		
5,300.00	5,297.22	5,294.90	5,289.94	11.34	11.57	-158.28	70.23	80.38	167.22	144.42	22.79	7.336		
5,400.00	5,396.79	5,393.28	5,386.96	11.55	11.81	-154.32	64.61	95.63	180.59	157.38	23.22	7.779		
5,500.00	5,496.36	5,491.65	5,483.98	11.75	12.06	-150.92	58.99	110.89	194.71	171.07	23.64	8.235		
5,600.00	5,595.93	5,590.02	5,581.00	11.96	12.31	-147.97	53.37	126.14	209.42	185.34	24.08	8.697		
5,700.00	5,695.50	5,688.40	5,678.02	12.17	12.57	-145.42	47.75	141.39	224.60	200.08	24.52	9.161		
5,800.00	5,795.07	5,786.77	5,775.04	12.38	12.84	-143.19	42.12	156.64	240.16	215.20	24.96	9.622		
5,900.00	5,894.64	5,885.14	5,872.07	12.59	13.11	-141.23	36.50	171.89	256.04	230.63	25.41	10.078		
6,000.00	5,994.21	5,983.52	5,969.09	12.81	13.38	-139.50	30.88	187.15	272.18	246.32	25.86	10.526		
6,100.00	6,093.78	6,081.89	6,066.11	13.03	13.66	-137.96	25.26	202.40	288.53	262.22	26.31	10.965		
6,200.00	6,193.35	6,180.26	6,163.13	13.26	13.94	-136.59	19.64	217.65	305.07	278.29	26.77	11.394		
6,300.00	6,292.92	6,278.64	6,260.15	13.48	14.23	-135.36	14.02	232.90	321.76	294.52	27.24	11.813		
6,400.00	6,392.49	6,377.01	6,357.17	13.71	14.52	-134.25	8.40	248.15	338.57	310.87	27.70	12.221		
6,500.00	6,492.06	6,475.38	6,454.19	13.94	14.82	-133.25	2.77	263.41	355.50	327.33	28.17	12.618		
6,600.00	6,591.63	6,573.76	6,551.21	14.17	15.12	-132.34	-2.85	278.66	372.53	343.89	28.65	13.004		
6,700.00	6,691.20	6,672.13	6,648.24	14.41	15.42	-131.51	-8.47	293.91	389.64	360.52	29.12	13.379		
6,800.00	6,790.77	6,770.50	6,745.26	14.64	15.72	-130.74	-14.09	309.16	406.83	377.23	29.60	13.743		
6,900.00	6,890.34	6,868.88	6,842.28	14.88	16.03	-130.04	-19.71	324.41	424.08	393.99	30.08	14.096		
7,000.00	6,989.91	6,967.25	6,939.30	15.12	16.34	-129.40	-25.33	339.67	441.38	410.81	30.57	14.439		
7,100.00	7,089.48	7,065.63	7,036.32	15.36	16.65	-128.80	-30.95	354.92	458.74	427.68	31.06	14.771		
7,200.00	7,189.05	7,164.00	7,133.34	15.60	16.97	-128.24	-36.57	370.17	476.14	444.59	31.55	15.093		
7,300.00	7,288.62	7,262.37	7,230.36	15.84	17.29	-127.73	-42.20	385.42	493.58	461.54	32.04	15.406		
7,400.00	7,388.19	7,360.75	7,327.38	16.09	17.61	-127.25	-47.82	400.67	511.06	478.53	32.53	15.709		
7,500.00	7,487.76	7,459.12	7,424.40	16.33	17.93	-126.80	-53.44	415.93	528.57	495.54	33.03	16.003		
7,600.00	7,587.33	7,557.49	7,521.43	16.58	18.25	-126.38	-59.06	431.18	546.11	512.58	33.53	16.288		
7,700.00	7,686.90	7,655.87	7,618.45	16.83	18.58	-125.99	-64.68	446.43	563.68	529.65	34.03	16.564		
7,800.00	7,786.47	7,750.00	7,711.30	17.08	18.89	-125.67	-69.71	461.03	581.42	546.90	34.52	16.843		
7,900.00	7,886.04	7,817.44	7,777.84	17.33	19.08	-125.99	-74.26	471.49	602.45	567.53	34.92	17.124		
8,000.00	7,985.61	7,884.30	7,843.07	17.58	19.26	-126.99	-78.03	481.74	628.18	592.89	35.29	17.398		
8,100.00	8,085.18	7,950.00	7,905.61	17.83	19.41	-128.53	-81.06	491.57	658.90	623.25	35.65	17.665		
8,200.00	8,184.75	8,000.00	7,951.64	18.08	19.51	-130.02	-83.48	498.81	694.92	658.96	35.96	17.926		
8,300.00	8,284.32	8,050.00	7,995.94	18.34	19.61	-131.74	-85.40	505.77	736.47	700.22	36.25	18.181		
8,400.00	8,383.89	8,100.00	8,038.16	18.59	19.69	-133.65	-86.91	512.41	783.55	747.02	36.53	18.428		
8,500.00	8,483.47	8,150.00	8,078.00	18.84	19.78	-135.79	-88.01	518.67	836.08	799.27	36.81	18.666		
8,600.00	8,583.11	8,176.92	8,098.35	19.08	19.82	-137.16	-88.70	521.87	893.04	855.98	37.06	18.896		
8,700.00	8,682.82	8,200.00	8,115.15	19.31	19.85	-138.39	-89.08	524.51	954.34	917.03	37.31	19.118		
8,800.00	8,782.60	8,250.00	8,149.31	19.54	19.93	-140.77	-89.15	529.89	1,019.33	981.77	37.56	19.333		
8,900.00	8,882.43	8,250.00	8,149.31	19.76	19.93	-141.06	-88.90	529.89	1,087.60	1,049.80	37.80	19.543		
9,000.00	8,982.31	8,300.00	8,180.24	19.98	20.01	-143.43	-88.23	534.75	1,158.69	1,120.66	38.03	19.748		
9,100.00	9,082.22	8,300.00	8,180.24	20.20	20.01	-143.76	-87.15	534.75	1,232.25	1,193.99	38.26	19.948		
9,200.00	9,182.17	8,327.64	8,195.86	20.42	20.06	-145.20	-85.66	537.20	1,308.05	1,269.55	38.50	20.143		
9,300.00	9,282.14	8,350.00	8,207.70	20.62	20.10	-146.42	-83.75	539.06	1,385.88	1,347.18	38.70	20.333		
9,400.00	9,382.13	8,350.00	8,207.70	20.83	20.10	-146.78	-82.42	539.06	1,465.50	1,426.58	38.92	20.518		
9,500.00	9,482.13	8,376.46	8,220.76	21.03	20.16	-148.15	-80.66	541.12	1,546.34	1,507.19	39.14	20.698		
9,600.00	9,582.13	8,400.00	8,231.48	21.23	20.21	-149.69	-78.47	542.38	1,628.84	1,589.51	39.33	20.873		
9,700.00	9,682.13	8,400.00	8,231.48	21.43	20.21	-149.69	-75.84	542.38	1,712.67	1,673.13	39.54	21.043		
9,800.00	9,782.13	8,400.00	8,231.48	21.63	20.21	-149.69	-72.76	542.38	1,798.16	1,758.41	39.75	21.208		
9,900.00	9,882.13	8,425.08	8,241.96	21.83	20.27	-149.69	-69.23	544.45	1,884.43	1,844.47	39.95	21.368		
10,000.00	9,982.13	8,450.00	8,251.39	22.03	20.34	-149.69	-65.26	545.93	1,972.21	1,932.07	40.15	21.523		
10,100.00	10,082.13	8,450.00	8,251.39	22.23	20.34	-149.69	-60.85	545.93	2,060.53	2,020.17	40.36	21.673		
10,200.00	10,182.13	8,450.00	8,251.39	22.43	20.34	-149.69	-56.00	545.93	2,149.87	2,109.30	40.57	21.818		
10,300.00	10,282.13	8,450.00	8,251.39	22.63	20.34	-149.69	-50.71	545.93	2,240.11	2,199.33	40.78	21.958		

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 312H (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:	312H (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		
10,400.00	10,382.13	8,450.00	8,251.39	22.83	20.34	42.88	295.11	545.93	2,331.14	2,290.15	40.99	56.874		
10,500.00	10,482.13	8,474.26	8,259.62	23.04	20.40	42.01	317.90	547.23	2,422.29	2,381.10	41.19	58.805		
10,600.00	10,582.13	8,500.00	8,267.29	23.24	20.49	41.11	342.44	548.43	2,514.70	2,473.31	41.39	60.758		
10,700.00	10,682.13	8,500.00	8,267.29	23.44	20.49	41.11	342.44	548.43	2,607.04	2,565.44	41.60	62.670		
10,800.00	10,782.13	8,500.00	8,267.29	23.65	20.49	41.11	342.44	548.43	2,699.93	2,658.12	41.81	64.574		
10,900.00	10,882.13	8,500.00	8,267.29	23.85	20.49	41.11	342.44	548.43	2,793.31	2,751.29	42.02	66.471		
11,000.00	10,982.13	8,500.00	8,267.29	24.06	20.49	41.11	342.44	548.43	2,887.14	2,844.90	42.23	68.359		
11,100.00	11,082.13	8,500.00	8,267.29	24.26	20.49	41.11	342.44	548.43	2,981.36	2,938.92	42.45	70.237		
11,200.00	11,181.99	8,500.00	8,267.29	24.45	20.49	31.31	342.44	548.43	3,074.94	3,032.16	42.78	71.877		
11,300.00	11,279.85	8,500.00	8,267.29	24.57	20.49	22.71	342.44	548.43	3,163.28	3,120.92	42.36	74.681		
11,400.00	11,372.77	8,528.43	8,274.50	24.62	20.59	17.80	369.91	549.56	3,243.24	3,202.28	40.96	79.188		
11,500.00	11,457.92	8,550.00	8,279.06	24.63	20.68	14.90	390.98	550.28	3,313.95	3,275.15	38.80	85.416		
11,600.00	11,532.71	8,550.00	8,279.06	24.62	20.68	13.12	390.98	550.28	3,373.16	3,337.05	36.11	93.405		
11,700.00	11,594.87	8,550.00	8,279.06	24.62	20.68	11.96	390.98	550.28	3,420.13	3,386.93	33.20	103.001		
11,800.00	11,642.51	8,600.00	8,286.60	24.66	20.91	11.21	440.38	551.47	3,453.55	3,422.99	30.57	112.989		
11,900.00	11,674.19	8,600.00	8,286.60	24.79	20.91	10.85	440.38	551.47	3,472.19	3,443.64	28.55	121.629		
12,000.00	11,688.93	8,600.00	8,286.60	25.03	20.91	10.76	440.38	551.47	3,476.66	3,448.94	27.72	125.410		
12,100.00	11,690.00	8,623.59	8,288.67	25.38	21.03	10.81	463.87	551.79	3,469.96	3,441.99	27.98	124.026		
12,200.00	11,690.00	8,650.00	8,289.86	25.86	21.17	10.81	490.25	551.98	3,464.87	3,436.61	28.26	122.586		
12,300.00	11,690.00	8,650.00	8,289.86	26.45	21.17	10.81	490.25	551.98	3,461.98	3,433.49	28.49	121.521		
12,393.69	11,690.00	8,693.65	8,290.00	27.10	21.44	10.82	533.90	552.00	3,461.49	3,432.59	28.89	119.801		
12,400.00	11,690.00	8,699.97	8,290.00	27.14	21.48	10.82	540.22	552.00	3,461.49	3,432.55	28.93	119.634		
12,500.00	11,690.00	8,799.97	8,290.00	27.94	22.20	10.82	640.22	552.00	3,461.49	3,431.85	29.63	116.814		
12,600.00	11,690.00	8,899.97	8,290.00	28.84	23.07	10.82	740.22	552.00	3,461.49	3,431.09	30.40	113.858		
12,700.00	11,690.00	8,999.97	8,290.00	29.82	24.05	10.82	840.22	552.00	3,461.49	3,430.25	31.24	110.819		
12,800.00	11,690.00	9,099.97	8,290.00	30.87	25.13	10.82	940.22	552.00	3,461.49	3,429.36	32.13	107.742		
12,900.00	11,690.00	9,199.97	8,290.00	32.00	26.30	10.82	1,040.22	552.00	3,461.49	3,428.42	33.07	104.662		
13,000.00	11,690.00	9,299.97	8,290.00	33.18	27.54	10.82	1,140.22	552.00	3,461.49	3,427.42	34.07	101.609		
13,100.00	11,690.00	9,399.97	8,290.00	34.43	28.84	10.82	1,240.22	552.00	3,461.49	3,426.39	35.10	98.607		
13,200.00	11,690.00	9,499.97	8,290.00	35.72	30.20	10.82	1,340.22	552.00	3,461.49	3,425.31	36.18	95.672		
13,300.00	11,690.00	9,599.97	8,290.00	37.06	31.60	10.82	1,440.22	552.00	3,461.49	3,424.20	37.29	92.816		
13,400.00	11,690.00	9,699.97	8,290.00	38.44	33.05	10.82	1,540.22	552.00	3,461.49	3,423.05	38.44	90.049		
13,500.00	11,690.00	9,799.97	8,290.00	39.85	34.53	10.82	1,640.22	552.00	3,461.49	3,421.88	39.62	87.376		
13,600.00	11,690.00	9,899.97	8,290.00	41.30	36.04	10.82	1,740.22	552.00	3,461.50	3,420.68	40.82	84.800		
13,700.00	11,690.00	9,999.97	8,290.00	42.78	37.58	10.82	1,840.22	552.00	3,461.50	3,419.45	42.05	82.323		
13,800.00	11,690.00	10,099.97	8,290.00	44.28	39.15	10.82	1,940.22	552.00	3,461.50	3,418.20	43.30	79.944		
13,900.00	11,690.00	10,199.97	8,290.00	45.80	40.73	10.82	2,040.22	552.00	3,461.50	3,416.93	44.57	77.663		
14,000.00	11,690.00	10,299.97	8,290.00	47.35	42.34	10.82	2,140.22	552.00	3,461.50	3,415.64	45.86	75.476		
14,100.00	11,690.00	10,399.97	8,290.00	48.92	43.96	10.82	2,240.22	552.00	3,461.50	3,414.33	47.17	73.381		
14,200.00	11,690.00	10,499.97	8,290.00	50.50	45.60	10.82	2,340.22	552.00	3,461.50	3,413.00	48.50	71.375		
14,300.00	11,690.00	10,599.97	8,290.00	52.10	47.26	10.82	2,440.22	552.00	3,461.50	3,411.66	49.84	69.455		
14,400.00	11,690.00	10,699.97	8,290.00	53.72	48.92	10.82	2,540.22	552.00	3,461.50	3,410.31	51.19	67.617		
14,500.00	11,690.00	10,799.97	8,290.00	55.35	50.60	10.82	2,640.22	552.00	3,461.50	3,408.94	52.56	65.858		
14,600.00	11,690.00	10,899.97	8,290.00	56.98	52.28	10.82	2,740.22	552.00	3,461.50	3,407.56	53.94	64.174		
14,700.00	11,690.00	10,999.97	8,290.00	58.64	53.98	10.82	2,840.22	552.00	3,461.50	3,406.17	55.33	62.561		
14,800.00	11,690.00	11,099.97	8,290.00	60.30	55.68	10.82	2,940.22	552.00	3,461.50	3,404.77	56.73	61.016		
14,900.00	11,690.00	11,199.97	8,290.00	61.97	57.39	10.82	3,040.22	552.00	3,461.51	3,403.36	58.14	59.535		
15,000.00	11,690.00	11,299.97	8,290.00	63.65	59.11	10.82	3,140.22	552.00	3,461.51	3,401.94	59.56	58.117		
15,100.00	11,690.00	11,399.97	8,290.00	65.33	60.83	10.82	3,240.22	552.00	3,461.51	3,400.52	60.99	56.756		
15,200.00	11,690.00	11,499.97	8,290.00	67.03	62.56	10.82	3,340.22	552.00	3,461.51	3,399.08	62.43	55.451		
15,300.00	11,690.00	11,599.97	8,290.00	68.73	64.30	10.82	3,440.22	552.00	3,461.51	3,397.64	63.87	54.198		
15,400.00	11,690.00	11,699.97	8,290.00	70.44	66.04	10.82	3,540.22	552.00	3,461.51	3,396.19	65.32	52.995		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 451H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
15,500.00	11,690.00	11,799.97	8,290.00	72.15	67.78	10.82	3,640.22	552.00	3,461.51	3,394.74	66.77	51.839		
15,600.00	11,690.00	11,899.97	8,290.00	73.87	69.53	10.82	3,740.22	552.00	3,461.51	3,393.27	68.24	50.728		
15,700.00	11,690.00	11,999.97	8,290.00	75.59	71.29	10.82	3,840.22	552.00	3,461.51	3,391.81	69.70	49.659		
15,800.00	11,690.00	12,099.97	8,290.00	77.32	73.04	10.82	3,940.22	552.00	3,461.51	3,390.33	71.18	48.632		
15,900.00	11,690.00	12,199.97	8,290.00	79.05	74.80	10.82	4,040.22	552.00	3,461.51	3,388.86	72.66	47.642		
16,000.00	11,690.00	12,299.97	8,290.00	80.79	76.57	10.82	4,140.22	552.00	3,461.51	3,387.37	74.14	46.689		
16,100.00	11,690.00	12,399.97	8,290.00	82.53	78.33	10.82	4,240.22	552.00	3,461.51	3,385.89	75.63	45.771		
16,200.00	11,690.00	12,499.97	8,290.00	84.28	80.10	10.82	4,340.22	552.00	3,461.52	3,384.40	77.12	44.885		
16,300.00	11,690.00	12,599.97	8,290.00	86.02	81.87	10.82	4,440.22	552.00	3,461.52	3,382.90	78.61	44.031		
16,357.86	11,690.00	12,657.83	8,290.00	87.04	82.90	10.82	4,498.08	552.00	3,461.52	3,382.03	79.48	43.551		



LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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														Offset Site Error:
Cotton Draw Unit - 452H (SIMOPS) - OH - Plan #1														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	-0.18	174.96	-0.54	174.96					
100.00	100.00	100.00	100.00	0.08	0.08	-0.18	174.96	-0.54	174.96	174.80	0.16	1,112.017		
200.00	200.00	200.00	200.00	0.30	0.30	-0.18	174.96	-0.54	174.96	174.35	0.61	288.301		
300.00	300.00	300.00	300.00	0.53	0.53	-0.18	174.96	-0.54	174.96	173.90	1.06	165.620		
400.00	400.00	400.00	400.00	0.75	0.75	-0.18	174.96	-0.54	174.96	173.45	1.51	116.181		
500.00	500.00	500.00	500.00	0.98	0.98	-0.18	174.96	-0.54	174.96	173.01	1.96	89.473		
600.00	600.00	600.00	600.00	1.20	1.20	-0.18	174.96	-0.54	174.96	172.56	2.40	72.749		
700.00	700.00	700.00	700.00	1.43	1.43	-0.18	174.96	-0.54	174.96	172.11	2.85	61.292		
800.00	800.00	800.00	800.00	1.65	1.65	-0.18	174.96	-0.54	174.96	171.66	3.30	52.953		
900.00	900.00	900.00	900.00	1.88	1.88	-0.18	174.96	-0.54	174.96	171.21	3.75	46.612		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-0.18	174.96	-0.54	174.96	170.76	4.20	41.626		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-0.18	174.96	-0.54	174.96	170.31	4.65	37.604		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-0.18	174.96	-0.54	174.96	169.86	5.10	34.291		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-0.18	174.96	-0.54	174.96	169.41	5.55	31.515		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-0.18	174.96	-0.54	174.96	168.96	6.00	29.154		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-0.18	174.96	-0.54	174.96	168.51	6.45	27.122		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-0.18	174.96	-0.54	174.96	168.06	6.90	25.355		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-0.18	174.96	-0.54	174.96	167.61	7.35	23.805		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-0.18	174.96	-0.54	174.96	167.16	7.80	22.433		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-0.18	174.96	-0.54	174.96	166.71	8.25	21.210		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-0.18	174.96	-0.54	174.96	166.26	8.70	20.114		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-0.18	174.96	-0.54	174.96	165.81	9.15	19.126		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-0.18	174.96	-0.54	174.96	165.36	9.60	18.230		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-0.18	174.96	-0.54	174.96	164.91	10.05	17.414		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-0.18	174.96	-0.54	174.96	164.46	10.50	16.668		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-0.18	174.96	-0.54	174.96	164.01	10.95	15.984		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-0.18	174.96	-0.54	174.96	163.57	11.40	15.353		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-0.18	174.96	-0.54	174.96	163.12	11.85	14.771		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-0.18	174.96	-0.54	174.96	162.67	12.29	14.231		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-0.18	174.96	-0.54	174.96	162.22	12.74	13.729		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-0.18	174.96	-0.54	174.96	161.77	13.19	13.261		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-0.18	174.96	-0.54	174.96	161.32	13.64	12.824		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-0.18	174.96	-0.54	174.96	160.87	14.09	12.415		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-0.18	174.96	-0.54	174.96	160.42	14.54	12.031		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-0.18	174.96	-0.54	174.96	159.97	14.99	11.670		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-0.18	174.96	-0.54	174.96	159.52	15.44	11.331		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-0.18	174.96	-0.54	174.96	159.07	15.89	11.010		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-0.18	174.96	-0.54	174.96	158.62	16.34	10.707		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-0.18	174.96	-0.54	174.96	158.17	16.79	10.421		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-0.18	174.96	-0.54	174.96	157.72	17.24	10.149		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-0.18	174.96	-0.54	174.96	157.27	17.69	9.891		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-0.18	174.96	-0.54	174.96	156.82	18.14	9.646		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-0.18	174.96	-0.54	174.96	156.37	18.59	9.412		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-0.18	174.96	-0.54	174.96	155.92	19.04	9.190 CC, ES		
4,400.00	4,400.00	4,400.00	4,400.00	9.71	9.74	166.12	174.96	-0.54	175.81	156.35	19.46	9.036		
4,500.00	4,499.96	4,499.96	4,499.96	9.88	9.97	166.31	174.96	-0.54	178.35	158.51	19.84	8.989 SF		
4,600.00	4,599.86	4,599.86	4,599.86	10.05	10.19	166.63	174.96	-0.54	182.59	162.37	20.22	9.029		
4,700.00	4,699.68	4,699.68	4,699.68	10.23	10.42	167.04	174.96	-0.54	188.54	167.94	20.60	9.152		
4,800.00	4,799.37	4,799.37	4,799.37	10.40	10.64	167.54	174.96	-0.54	196.19	175.22	20.97	9.354		
4,900.00	4,898.94	4,898.94	4,898.94	10.58	10.87	168.09	174.96	-0.54	205.16	183.80	21.37	9.603		
5,000.00	4,998.51	4,998.51	4,998.51	10.77	11.09	168.60	174.96	-0.54	214.24	192.47	21.77	9.842		
5,100.00	5,098.08	5,100.20	5,100.20	10.96	11.29	169.27	174.45	0.17	222.86	200.71	22.15	10.060		

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 312H (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:	312H (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			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	5,197.65	5,201.98	5,201.94	11.15	11.48	170.27	172.87	2.34	230.58	208.06	22.52	10.239			
5,300.00	5,297.22	5,303.77	5,303.62	11.34	11.66	171.58	170.24	5.98	237.45	214.56	22.89	10.373			
5,400.00	5,396.79	5,405.48	5,405.15	11.55	11.85	173.18	166.55	11.08	243.57	220.30	23.27	10.469			
5,500.00	5,496.36	5,507.07	5,506.41	11.75	12.05	175.06	161.81	17.62	249.05	225.40	23.65	10.533			
5,600.00	5,595.93	5,608.47	5,607.32	11.96	12.24	177.23	156.03	25.61	254.03	230.00	24.03	10.571			
5,700.00	5,695.50	5,709.61	5,707.80	12.17	12.45	179.66	149.22	35.01	258.66	234.24	24.42	10.591			
5,800.00	5,795.07	5,810.43	5,807.73	12.38	12.65	-177.64	141.40	45.81	263.14	238.31	24.82	10.600			
5,900.00	5,894.64	5,910.88	5,907.05	12.59	12.87	-174.69	132.59	57.98	267.65	242.41	25.24	10.606			
6,000.00	5,994.21	6,010.89	6,005.65	12.81	13.10	-171.50	122.80	71.51	272.41	246.75	25.66	10.617			
6,100.00	6,093.78	6,109.99	6,103.10	13.03	13.33	-168.15	112.21	86.13	277.71	251.61	26.10	10.642			
6,200.00	6,193.35	6,208.50	6,199.91	13.26	13.57	-164.90	101.55	100.86	283.90	257.35	26.54	10.695			
6,300.00	6,292.92	6,307.00	6,296.72	13.48	13.82	-161.80	90.88	115.59	290.98	263.97	27.00	10.776			
6,400.00	6,392.49	6,405.50	6,393.53	13.71	14.08	-158.85	80.22	130.32	298.88	271.41	27.47	10.880			
6,500.00	6,492.06	6,504.01	6,490.34	13.94	14.34	-156.05	69.55	145.05	307.56	279.61	27.95	11.005			
6,600.00	6,591.63	6,602.51	6,587.15	14.17	14.61	-153.41	58.89	159.78	316.93	288.49	28.43	11.146			
6,700.00	6,691.20	6,701.01	6,683.96	14.41	14.89	-150.93	48.23	174.51	326.94	298.02	28.93	11.303			
6,800.00	6,790.77	6,799.51	6,780.77	14.64	15.17	-148.59	37.56	189.24	337.54	308.12	29.42	11.472			
6,900.00	6,890.34	6,898.02	6,877.58	14.88	15.45	-146.40	26.90	203.97	348.67	318.74	29.93	11.651			
7,000.00	6,989.91	6,996.52	6,974.38	15.12	15.75	-144.34	16.23	218.70	360.28	329.84	30.43	11.838			
7,100.00	7,089.48	7,095.02	7,071.19	15.36	16.04	-142.41	5.57	233.43	372.32	341.38	30.95	12.031			
7,200.00	7,189.05	7,193.52	7,168.00	15.60	16.35	-140.60	-5.10	248.16	384.77	353.30	31.46	12.229			
7,300.00	7,288.62	7,292.03	7,264.81	15.84	16.65	-138.91	-15.76	262.89	397.57	365.58	31.98	12.431			
7,400.00	7,388.19	7,390.53	7,361.62	16.09	16.96	-137.32	-26.43	277.62	410.69	378.19	32.50	12.636			
7,500.00	7,487.76	7,489.03	7,458.43	16.33	17.28	-135.83	-37.09	292.35	424.11	391.08	33.03	12.842			
7,600.00	7,587.33	7,587.54	7,555.24	16.58	17.59	-134.43	-47.75	307.08	437.80	404.25	33.55	13.049			
7,700.00	7,686.90	7,686.04	7,652.05	16.83	17.92	-133.12	-58.42	321.81	451.73	417.65	34.08	13.256			
7,800.00	7,786.47	7,784.54	7,748.86	17.08	18.24	-131.88	-69.08	336.54	465.88	431.27	34.61	13.462			
7,900.00	7,886.04	7,883.04	7,845.67	17.33	18.57	-130.72	-79.75	351.27	480.23	445.10	35.14	13.667			
8,000.00	7,985.61	7,981.55	7,942.48	17.58	18.90	-129.62	-90.41	366.00	494.77	459.10	35.67	13.870			
8,100.00	8,085.18	8,080.05	8,039.29	17.83	19.23	-128.59	-101.08	380.73	509.48	473.27	36.20	14.072			
8,200.00	8,184.75	8,178.55	8,136.10	18.08	19.57	-127.61	-111.74	395.46	524.34	487.60	36.74	14.272			
8,300.00	8,284.32	8,277.06	8,232.91	18.34	19.91	-126.69	-122.40	410.19	539.34	502.07	37.28	14.469			
8,400.00	8,383.89	8,375.56	8,329.72	18.59	20.25	-125.82	-133.07	424.92	554.48	516.66	37.81	14.663			
8,500.00	8,483.47	8,474.06	8,426.53	18.84	20.59	-125.01	-143.73	439.65	569.68	531.32	38.35	14.853			
8,600.00	8,583.11	8,572.58	8,523.35	19.08	20.94	-124.23	-154.40	454.39	584.58	545.69	38.89	15.032			
8,700.00	8,682.82	8,671.11	8,620.19	19.31	21.29	-123.41	-165.07	469.12	599.13	559.71	39.42	15.200			
8,800.00	8,782.60	8,774.78	8,722.19	19.54	21.61	-122.56	-175.94	484.14	613.01	573.09	39.92	15.355			
8,900.00	8,882.43	8,880.32	8,826.35	19.76	21.92	-121.81	-185.92	497.93	625.53	585.11	40.41	15.478			
9,000.00	8,982.31	8,986.38	8,931.31	19.98	22.21	-121.15	-194.81	510.21	636.61	595.71	40.90	15.567			
9,100.00	9,082.22	9,092.90	9,037.00	20.20	22.50	-120.57	-202.60	520.96	646.21	604.84	41.37	15.622			
9,200.00	9,182.17	9,199.81	9,143.31	20.42	22.77	-120.07	-209.25	530.15	654.30	612.47	41.82	15.644			
9,300.00	9,282.14	9,307.07	9,250.15	20.62	23.03	-119.64	-214.76	537.75	660.86	618.59	42.27	15.634			
9,400.00	9,382.13	9,414.60	9,357.42	20.83	23.27	-119.28	-219.10	543.75	665.85	623.15	42.70	15.593			
9,500.00	9,482.13	9,522.34	9,465.03	21.03	23.50	-118.98	-222.26	548.12	669.28	626.15	43.12	15.520			
9,600.00	9,582.13	9,630.24	9,572.87	21.23	23.71	75.01	-224.24	550.85	671.25	627.72	43.53	15.420			
9,700.00	9,682.13	9,738.23	9,680.85	21.43	23.91	75.10	-225.02	551.94	672.04	628.10	43.94	15.296			
9,800.00	9,782.13	9,839.50	9,782.13	21.63	24.10	75.10	-225.04	551.96	672.05	627.72	44.33	15.161			
9,900.00	9,882.13	9,939.50	9,882.13	21.83	24.28	75.10	-225.04	551.96	672.05	627.33	44.73	15.026			
10,000.00	9,982.13	10,019.76	9,962.25	22.03	24.42	74.81	-221.44	551.96	673.28	628.21	45.07	14.938			
10,100.00	10,082.13	10,100.00	10,041.10	22.23	24.51	73.62	-206.91	551.96	678.18	632.79	45.39	14.941			
10,200.00	10,182.13	10,163.97	10,102.03	22.43	24.54	72.06	-187.52	551.96	687.35	641.69	45.65	15.056			
10,300.00	10,282.13	10,227.94	10,160.41	22.63	24.55	70.00	-161.47	551.96	701.77	655.87	45.90	15.290			

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 312H (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:	312H (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			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			
10,400.00	10,382.13	10,285.33	10,210.03	22.83	24.54	67.79	-132.68	551.96	722.30	676.18	46.12	15.662			
10,500.00	10,482.13	10,336.13	10,251.37	23.04	24.52	65.60	-103.17	551.96	749.58	703.26	46.32	16.181			
10,600.00	10,582.13	10,380.76	10,285.39	23.24	24.49	63.52	-74.32	551.96	783.91	737.39	46.52	16.851			
10,700.00	10,682.13	10,419.81	10,313.25	23.44	24.46	61.62	-46.96	551.96	825.22	778.51	46.71	17.667			
10,800.00	10,782.13	10,450.00	10,333.47	23.65	24.44	60.11	-24.55	551.96	873.17	826.27	46.90	18.618			
10,900.00	10,882.13	10,483.91	10,354.74	23.85	24.41	58.39	1.85	551.96	927.19	880.11	47.08	19.692			
11,000.00	10,982.13	10,500.00	10,364.28	24.06	24.40	57.57	14.81	551.96	986.82	939.54	47.28	20.871			
11,100.00	11,082.13	10,533.43	10,382.91	24.26	24.36	55.86	42.56	551.96	1,051.03	1,003.57	47.46	22.145			
11,200.00	11,181.99	10,550.00	10,391.54	24.45	24.35	50.39	56.71	551.96	1,117.98	1,070.33	47.65	23.464			
11,300.00	11,279.85	10,579.55	10,405.89	24.57	24.32	43.42	82.54	551.96	1,180.78	1,133.50	47.28	24.976			
11,400.00	11,372.77	10,600.00	10,415.04	24.62	24.30	38.39	100.82	551.96	1,237.44	1,191.24	46.20	26.783			
11,500.00	11,457.92	10,650.00	10,434.61	24.63	24.26	34.19	146.82	551.96	1,286.77	1,242.36	44.41	28.972			
11,600.00	11,532.71	10,650.00	10,434.61	24.62	24.26	31.77	146.82	551.96	1,327.26	1,284.95	42.31	31.372			
11,700.00	11,594.87	10,700.00	10,450.09	24.62	24.23	29.68	194.34	551.96	1,358.24	1,318.24	39.99	33.961			
11,800.00	11,642.51	10,725.96	10,456.48	24.66	24.21	28.50	219.50	551.96	1,379.45	1,341.46	37.99	36.309			
11,900.00	11,674.19	10,750.00	10,461.38	24.79	24.21	27.91	243.04	551.96	1,390.46	1,353.80	36.66	37.928			
12,000.00	11,688.93	10,800.00	10,468.37	25.03	24.21	27.88	292.53	551.96	1,390.97	1,354.59	36.38	38.235			
12,100.00	11,690.00	10,821.08	10,470.03	25.38	24.22	28.03	313.54	551.96	1,384.03	1,347.33	36.71	37.705			
12,200.00	11,690.00	10,860.65	10,471.14	25.86	24.27	28.05	353.09	551.97	1,381.16	1,344.08	37.08	37.244			
12,300.00	11,690.00	10,960.64	10,472.20	26.45	24.52	28.07	453.08	551.97	1,380.23	1,342.49	37.74	36.568			
12,400.00	11,690.00	11,060.64	10,473.26	27.14	25.00	28.09	553.07	551.97	1,379.30	1,340.79	38.51	35.818			
12,500.00	11,690.00	11,160.63	10,474.31	27.94	25.65	28.11	653.06	551.97	1,378.37	1,339.00	39.38	35.004			
12,600.00	11,690.00	11,260.63	10,475.37	28.84	26.42	28.14	753.05	551.97	1,377.44	1,337.10	40.34	34.143			
12,700.00	11,690.00	11,360.62	10,476.43	29.82	27.30	28.16	853.04	551.97	1,376.51	1,335.11	41.40	33.249			
12,800.00	11,690.00	11,460.62	10,477.48	30.87	28.26	28.18	953.03	551.97	1,375.58	1,333.04	42.54	32.335			
12,900.00	11,690.00	11,560.61	10,478.54	32.00	29.31	28.20	1,053.01	551.97	1,374.66	1,330.89	43.76	31.412			
13,000.00	11,690.00	11,660.60	10,479.60	33.18	30.43	28.22	1,153.00	551.97	1,373.73	1,328.67	45.05	30.491			
13,100.00	11,690.00	11,760.60	10,480.65	34.43	31.62	28.24	1,252.99	551.97	1,372.80	1,326.39	46.41	29.579			
13,200.00	11,690.00	11,860.59	10,481.71	35.72	32.86	28.26	1,352.98	551.97	1,371.87	1,324.04	47.83	28.682			
13,300.00	11,690.00	11,960.59	10,482.77	37.06	34.16	28.28	1,452.97	551.97	1,370.94	1,321.64	49.30	27.806			
13,400.00	11,690.00	12,060.58	10,483.82	38.44	35.50	28.30	1,552.96	551.98	1,370.01	1,319.18	50.83	26.954			
13,500.00	11,690.00	12,160.58	10,484.88	39.85	36.88	28.32	1,652.95	551.98	1,369.08	1,316.68	52.40	26.127			
13,600.00	11,690.00	12,260.57	10,485.94	41.30	38.30	28.35	1,752.94	551.98	1,368.16	1,314.14	54.02	25.329			
13,700.00	11,690.00	12,360.57	10,486.99	42.78	39.75	28.37	1,852.92	551.98	1,367.23	1,311.56	55.67	24.560			
13,800.00	11,690.00	12,460.56	10,488.05	44.28	41.23	28.39	1,952.91	551.98	1,366.30	1,308.94	57.36	23.820			
13,900.00	11,690.00	12,560.55	10,489.11	45.80	42.73	28.41	2,052.90	551.98	1,365.37	1,306.29	59.08	23.110			
14,000.00	11,690.00	12,660.55	10,490.16	47.35	44.26	28.43	2,152.89	551.98	1,364.45	1,303.61	60.84	22.428			
14,100.00	11,690.00	12,760.54	10,491.22	48.92	45.81	28.45	2,252.88	551.98	1,363.52	1,300.90	62.62	21.775			
14,200.00	11,690.00	12,860.54	10,492.28	50.50	47.38	28.47	2,352.87	551.98	1,362.59	1,298.17	64.43	21.150			
14,300.00	11,690.00	12,960.53	10,493.33	52.10	48.97	28.49	2,452.86	551.98	1,361.67	1,295.41	66.26	20.551			
14,400.00	11,690.00	13,060.53	10,494.39	53.72	50.58	28.52	2,552.85	551.98	1,360.74	1,292.63	68.11	19.978			
14,500.00	11,690.00	13,160.52	10,495.45	55.35	52.20	28.54	2,652.84	551.99	1,359.82	1,289.83	69.99	19.429			
14,600.00	11,690.00	13,260.52	10,496.50	56.98	53.83	28.56	2,752.82	551.99	1,358.89	1,287.01	71.88	18.905			
14,700.00	11,690.00	13,360.51	10,497.56	58.64	55.47	28.58	2,852.81	551.99	1,357.96	1,284.17	73.79	18.402			
14,800.00	11,690.00	13,460.50	10,498.62	60.30	57.13	28.60	2,952.80	551.99	1,357.04	1,281.32	75.72	17.921			
14,900.00	11,690.00	13,560.50	10,499.67	61.97	58.79	28.62	3,052.79	551.99	1,356.11	1,278.45	77.67	17.461			
15,000.00	11,690.00	13,660.49	10,500.73	63.65	60.47	28.65	3,152.78	551.99	1,355.19	1,275.56	79.63	17.020			
15,100.00	11,690.00	13,760.49	10,501.79	65.33	62.15	28.67	3,252.77	551.99	1,354.26	1,272.67	81.60	16.597			
15,200.00	11,690.00	13,860.48	10,502.84	67.03	63.84	28.69	3,352.76	551.99	1,353.34	1,269.76	83.58	16.192			
15,300.00	11,690.00	13,960.48	10,503.90	68.73	65.54	28.71	3,452.75	551.99	1,352.41	1,266.83	85.58	15.803			
15,400.00	11,690.00	14,060.47	10,504.96	70.44	67.24	28.73	3,552.73	551.99	1,351.49	1,263.90	87.59	15.430			
15,500.00	11,690.00	14,160.47	10,506.01	72.15	68.95	28.75	3,652.72	551.99	1,350.56	1,260.96	89.61	15.072			

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 452H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,600.00	11,690.00	14,260.46	10,507.07	73.87	70.67	28.78	3,752.71	551.99	1,349.64	1,258.00	91.64	14.728		
15,700.00	11,690.00	14,360.45	10,508.13	75.59	72.39	28.80	3,852.70	552.00	1,348.72	1,255.04	93.68	14.397		
15,800.00	11,690.00	14,460.45	10,509.18	77.32	74.12	28.82	3,952.69	552.00	1,347.79	1,252.07	95.73	14.080		
15,900.00	11,690.00	14,560.44	10,510.24	79.05	75.85	28.84	4,052.68	552.00	1,346.87	1,249.09	97.78	13.774		
16,000.00	11,690.00	14,660.44	10,511.30	80.79	77.59	28.86	4,152.67	552.00	1,345.95	1,246.10	99.85	13.480		
16,100.00	11,690.00	14,760.43	10,512.35	82.53	79.33	28.88	4,252.66	552.00	1,345.02	1,243.10	101.92	13.197		
16,200.00	11,690.00	14,860.43	10,513.41	84.28	81.07	28.91	4,352.65	552.00	1,344.10	1,240.10	104.00	12.924		
16,300.00	11,690.00	14,960.42	10,514.47	86.02	82.82	28.93	4,452.63	552.00	1,343.18	1,237.09	106.09	12.661		
16,357.86	11,690.00	15,011.76	10,515.01	87.04	83.73	28.94	4,503.97	552.00	1,342.66	1,235.45	107.21	12.523		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 453H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+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	-0.18	149.96	-0.46	149.96					
100.00	100.00	100.00	100.00	0.08	0.08	-0.18	149.96	-0.46	149.96	149.80	0.16	953.121		
200.00	200.00	200.00	200.00	0.30	0.30	-0.18	149.96	-0.46	149.96	149.35	0.61	247.106		
300.00	300.00	300.00	300.00	0.53	0.53	-0.18	149.96	-0.46	149.96	148.90	1.06	141.954		
400.00	400.00	400.00	400.00	0.75	0.75	-0.18	149.96	-0.46	149.96	148.45	1.51	99.580		
500.00	500.00	500.00	500.00	0.98	0.98	-0.18	149.96	-0.46	149.96	148.01	1.96	76.688		
600.00	600.00	600.00	600.00	1.20	1.20	-0.18	149.96	-0.46	149.96	147.56	2.40	62.354		
700.00	700.00	700.00	700.00	1.43	1.43	-0.18	149.96	-0.46	149.96	147.11	2.85	52.534		
800.00	800.00	800.00	800.00	1.65	1.65	-0.18	149.96	-0.46	149.96	146.66	3.30	45.387		
900.00	900.00	900.00	900.00	1.88	1.88	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	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	-0.18	149.96	-0.46	149.96	130.92	19.04	7.877		
4,400.00	4,400.00	4,402.60	4,402.59	9.71	9.72	166.05	149.07	-0.69	149.94	130.51	19.43	7.717		
4,500.00	4,499.96	4,505.19	4,505.15	9.88	9.89	166.03	146.40	-1.39	149.89	130.12	19.77	7.583		
4,600.00	4,599.86	4,607.79	4,607.64	10.05	10.07	165.99	141.96	-2.54	149.79	129.69	20.10	7.453		
4,700.00	4,699.68	4,710.38	4,710.03	10.23	10.25	165.94	135.74	-4.16	149.66	129.23	20.43	7.325		
4,793.89	4,793.28	4,806.42	4,805.77	10.39	10.42	165.88	128.33	-6.10	149.51	128.77	20.74	7.209 CC		
4,800.00	4,799.37	4,812.54	4,811.86	10.40	10.43	165.88	127.81	-6.23	149.52	128.76	20.76	7.202 ES		
4,900.00	4,898.94	4,912.54	4,911.48	10.58	10.61	165.88	119.45	-8.41	150.07	128.96	21.11	7.109		
5,000.00	4,998.51	5,012.53	5,011.10	10.77	10.79	165.89	111.08	-10.59	150.70	129.23	21.47	7.020		

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 312H (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:	312H (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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 453H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.00	5,098.08	5,112.53	5,110.73	10.96	10.98	165.91	102.71	-12.77	151.33	129.50	21.83	6.931		
5,200.00	5,197.65	5,212.53	5,210.35	11.15	11.17	165.92	94.34	-14.95	151.97	129.76	22.20	6.845		
5,300.00	5,297.22	5,312.53	5,309.97	11.34	11.37	165.93	85.98	-17.13	152.60	130.02	22.58	6.760		
5,400.00	5,396.79	5,412.53	5,409.80	11.55	11.57	165.94	77.61	-19.31	153.23	130.28	22.95	6.676		
5,500.00	5,496.36	5,512.52	5,509.22	11.75	11.77	165.95	69.24	-21.49	153.87	130.53	23.33	6.595		
5,600.00	5,595.93	5,612.52	5,608.84	11.96	11.97	165.96	60.88	-23.67	154.50	130.78	23.72	6.515		
5,700.00	5,695.50	5,712.52	5,708.47	12.17	12.18	165.97	52.51	-25.85	155.13	131.03	24.10	6.436		
5,800.00	5,795.07	5,812.52	5,808.09	12.38	12.39	165.98	44.14	-28.03	155.77	131.27	24.49	6.360		
5,900.00	5,894.64	5,912.52	5,907.71	12.59	12.61	165.99	35.77	-30.21	156.40	131.51	24.88	6.285		
6,000.00	5,994.21	6,012.51	6,007.34	12.81	12.82	166.00	27.41	-32.39	157.03	131.75	25.28	6.212		
6,100.00	6,093.78	6,112.51	6,106.96	13.03	13.04	166.01	19.04	-34.57	157.67	131.99	25.68	6.140		
6,200.00	6,193.35	6,212.51	6,206.59	13.26	13.26	166.02	10.67	-36.75	158.30	132.22	26.08	6.070		
6,300.00	6,292.92	6,312.51	6,306.21	13.48	13.48	166.03	2.30	-38.93	158.93	132.45	26.48	6.002		
6,400.00	6,392.49	6,412.51	6,405.83	13.71	13.71	166.04	-6.06	-41.11	159.57	132.68	26.89	5.935		
6,500.00	6,492.06	6,512.50	6,505.46	13.94	13.93	166.05	-14.43	-43.29	160.20	132.91	27.29	5.870		
6,600.00	6,591.63	6,612.50	6,605.08	14.17	14.16	166.06	-22.80	-45.47	160.83	133.13	27.70	5.806		
6,700.00	6,691.20	6,712.50	6,704.70	14.41	14.39	166.07	-31.16	-47.65	161.47	133.35	28.11	5.743		
6,800.00	6,790.77	6,812.50	6,804.33	14.64	14.62	166.08	-39.53	-49.83	162.10	133.57	28.53	5.682		
6,900.00	6,890.34	6,912.50	6,903.95	14.88	14.85	166.09	-47.90	-52.01	162.73	133.79	28.94	5.623		
7,000.00	6,989.91	7,012.49	7,003.57	15.12	15.09	166.10	-56.27	-54.19	163.37	134.01	29.36	5.564		
7,100.00	7,089.48	7,112.49	7,103.20	15.36	15.32	166.11	-64.63	-56.37	164.00	134.22	29.78	5.507		
7,200.00	7,189.05	7,212.49	7,202.82	15.60	15.56	166.12	-73.00	-58.55	164.63	134.44	30.20	5.452		
7,300.00	7,288.62	7,312.49	7,302.44	15.84	15.80	166.13	-81.37	-60.73	165.27	134.65	30.62	5.397		
7,400.00	7,388.19	7,412.49	7,402.07	16.09	16.04	166.14	-89.74	-62.91	165.90	134.86	31.04	5.344		
7,500.00	7,487.76	7,512.48	7,501.69	16.33	16.28	166.15	-98.10	-65.09	166.53	135.07	31.47	5.292		
7,600.00	7,587.33	7,612.48	7,601.31	16.58	16.52	166.16	-106.47	-67.27	167.17	135.27	31.89	5.241		
7,700.00	7,686.90	7,712.48	7,700.94	16.83	16.77	166.17	-114.84	-69.45	167.80	135.48	32.32	5.192		
7,800.00	7,786.47	7,812.48	7,800.56	17.08	17.01	166.18	-123.20	-71.63	168.43	135.69	32.75	5.143		
7,900.00	7,886.04	7,912.48	7,900.18	17.33	17.26	166.18	-131.57	-73.81	169.07	135.89	33.18	5.096		
8,000.00	7,985.61	8,012.47	7,999.81	17.58	17.50	166.19	-139.94	-75.99	169.70	136.09	33.61	5.049		
8,100.00	8,085.18	8,112.47	8,099.43	17.83	17.75	166.20	-148.31	-78.17	170.34	136.29	34.04	5.004		
8,200.00	8,184.75	8,212.47	8,199.05	18.08	18.00	166.21	-156.67	-80.35	170.97	136.49	34.48	4.959		
8,300.00	8,284.32	8,312.47	8,298.68	18.34	18.24	166.22	-165.04	-82.53	171.60	136.69	34.91	4.916		
8,400.00	8,383.89	8,412.47	8,398.30	18.59	18.49	166.23	-173.41	-84.71	172.24	136.89	35.34	4.873		
8,500.00	8,483.47	8,512.46	8,497.93	18.84	18.74	166.23	-181.78	-86.89	172.88	137.00	35.79	4.828		
8,600.00	8,583.11	8,611.19	8,596.31	19.08	18.98	166.20	-189.71	-88.96	172.94	136.71	36.23	4.773		
8,700.00	8,682.82	8,709.75	8,694.59	19.31	19.21	166.18	-196.83	-90.81	173.07	136.40	36.67	4.720		
8,800.00	8,782.60	8,808.31	8,792.94	19.54	19.43	166.15	-203.12	-92.45	173.19	136.08	37.10	4.668		
8,900.00	8,882.43	8,906.87	8,891.33	19.76	19.65	166.13	-208.60	-93.88	173.29	135.75	37.54	4.617		
9,000.00	8,982.31	9,005.42	8,989.77	19.98	19.87	166.12	-213.25	-95.09	173.38	135.41	37.97	4.567		
9,100.00	9,082.22	9,103.98	9,088.25	20.20	20.08	166.10	-217.09	-96.09	173.45	135.06	38.39	4.518		
9,200.00	9,182.17	9,202.54	9,186.76	20.42	20.29	166.09	-220.11	-96.88	173.50	134.69	38.81	4.470		
9,300.00	9,282.14	9,301.09	9,285.29	20.62	20.50	166.08	-222.30	-97.45	173.54	134.31	39.23	4.424		
9,400.00	9,382.13	9,400.00	9,384.18	20.83	20.70	166.08	-223.68	-97.81	173.57	133.92	39.65	4.378		
9,424.69	9,406.82	9,423.99	9,408.17	20.88	20.75	166.08	-223.89	-97.87	173.57	133.83	39.75	4.367		
9,500.00	9,482.13	9,498.21	9,482.39	21.03	20.90	166.08	-224.24	-97.96	173.58	133.52	40.06	4.333		
9,600.00	9,582.13	9,597.95	9,582.13	21.23	21.10	-0.15	-224.25	-97.96	173.58	133.11	40.47	4.289		
9,700.00	9,682.13	9,697.95	9,682.13	21.43	21.30	-0.15	-224.25	-97.96	173.58	132.69	40.89	4.245		
9,800.00	9,782.13	9,797.95	9,782.13	21.63	21.50	-0.15	-224.25	-97.96	173.58	132.27	41.31	4.202		
9,900.00	9,882.13	9,897.95	9,882.13	21.83	21.70	-0.15	-224.25	-97.96	173.58	131.85	41.73	4.160 SF		
10,000.00	9,982.13	9,975.70	9,959.69	22.03	21.83	-0.15	-219.75	-97.96	179.49	137.39	42.10	4.263		
10,100.00	10,082.13	10,050.00	10,032.60	22.23	21.92	-0.14	-205.72	-97.96	198.40	155.94	42.45	4.673		

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 312H (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:	312H (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 - 453H (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		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	10,182.13	10,118.88	10,098.05	22.43	21.96	-0.12	-184.38	-97.96	229.42	186.63	42.79	5.362		
10,300.00	10,282.13	10,182.16	10,155.52	22.63	21.98	-0.11	-157.99	-97.96	271.21	228.11	43.10	6.293		
10,400.00	10,382.13	10,238.85	10,204.27	22.83	21.98	-0.10	-129.09	-97.95	322.27	278.88	43.39	7.428		
10,500.00	10,482.13	10,288.99	10,244.82	23.04	21.98	-0.09	-99.62	-97.95	381.11	337.45	43.66	8.729		
10,600.00	10,582.13	10,333.02	10,278.18	23.24	21.98	-0.08	-70.91	-97.95	446.39	402.47	43.92	10.163		
10,700.00	10,682.13	10,371.55	10,305.50	23.44	21.97	-0.07	-43.75	-97.95	516.94	472.77	44.17	11.703		
10,800.00	10,782.13	10,400.00	10,324.46	23.65	21.97	-0.07	-22.54	-97.95	591.86	547.45	44.41	13.327		
10,900.00	10,882.13	10,434.81	10,346.20	23.85	21.97	-0.06	4.64	-97.95	670.23	625.58	44.65	15.010		
11,000.00	10,982.13	10,450.00	10,355.16	24.06	21.97	-0.06	16.91	-97.95	751.73	706.86	44.88	16.751		
11,100.00	11,082.13	10,483.73	10,373.87	24.26	21.99	-0.06	44.97	-97.94	835.28	790.17	45.11	18.516		
11,200.00	11,181.99	10,500.00	10,382.30	24.45	21.99	-0.05	58.88	-97.94	919.09	874.02	45.07	20.393		
11,300.00	11,279.85	10,529.39	10,396.51	24.57	22.01	-0.04	84.61	-97.94	995.40	951.16	44.23	22.505		
11,400.00	11,372.77	10,550.00	10,405.68	24.62	22.03	-0.03	103.06	-97.94	1,062.75	1,020.09	42.67	24.909		
11,500.00	11,457.92	10,600.00	10,425.12	24.63	22.09	-0.02	149.11	-97.94	1,120.48	1,079.94	40.54	27.639		
11,600.00	11,532.71	10,600.00	10,425.12	24.62	22.09	-0.02	149.11	-97.94	1,167.23	1,129.19	38.03	30.690		
11,700.00	11,594.87	10,650.00	10,440.47	24.62	22.18	-0.02	196.68	-97.94	1,202.78	1,167.29	35.50	33.882		
11,800.00	11,642.51	10,674.83	10,446.54	24.66	22.24	-0.02	220.75	-97.93	1,226.96	1,193.70	33.27	36.883		
11,900.00	11,674.19	10,700.00	10,451.82	24.79	22.31	-0.02	245.41	-97.93	1,239.46	1,207.71	31.75	39.036		
12,000.00	11,688.93	10,750.00	10,458.48	25.03	22.46	-0.02	294.92	-97.93	1,240.14	1,208.81	31.33	39.579		
12,100.00	11,690.00	10,769.42	10,459.97	25.38	22.53	-0.02	314.27	-97.93	1,232.25	1,200.68	31.58	39.023		
12,200.00	11,690.00	10,800.00	10,460.99	25.86	22.64	-0.02	344.84	-97.93	1,229.01	1,197.20	31.81	38.630		
12,212.29	11,690.00	10,805.67	10,461.01	25.93	22.67	-0.02	350.50	-97.93	1,228.99	1,197.14	31.85	38.586		
12,300.00	11,690.00	10,891.53	10,460.74	26.45	23.07	-0.02	436.36	-97.92	1,229.27	1,197.06	32.21	38.166		
12,400.00	11,690.00	10,991.53	10,460.42	27.14	23.65	-0.02	536.36	-97.92	1,229.58	1,196.90	32.68	37.626		
12,500.00	11,690.00	11,091.52	10,460.11	27.94	24.36	-0.02	636.36	-97.91	1,229.90	1,196.69	33.21	37.037		
12,600.00	11,690.00	11,191.52	10,459.80	28.84	25.18	-0.02	736.36	-97.91	1,230.21	1,196.42	33.79	36.405		
12,700.00	11,690.00	11,291.52	10,459.48	29.82	26.10	-0.02	836.36	-97.90	1,230.52	1,196.09	34.43	35.739		
12,800.00	11,690.00	11,391.52	10,459.17	30.87	27.11	-0.02	936.36	-97.89	1,230.84	1,195.72	35.12	35.048		
12,900.00	11,690.00	11,491.52	10,458.85	32.00	28.21	-0.02	1,036.36	-97.89	1,231.15	1,195.30	35.85	34.337		
13,000.00	11,690.00	11,591.52	10,458.54	33.18	29.37	-0.02	1,136.36	-97.88	1,231.46	1,194.83	36.63	33.615		
13,100.00	11,690.00	11,691.52	10,458.23	34.43	30.61	-0.01	1,236.36	-97.88	1,231.78	1,194.32	37.46	32.886		
13,200.00	11,690.00	11,791.52	10,457.91	35.72	31.89	-0.01	1,336.35	-97.87	1,232.09	1,193.77	38.32	32.155		
13,300.00	11,690.00	11,891.52	10,457.60	37.06	33.23	-0.01	1,436.35	-97.87	1,232.40	1,193.19	39.21	31.428		
13,400.00	11,690.00	11,991.52	10,457.29	38.44	34.62	-0.01	1,536.35	-97.86	1,232.72	1,192.57	40.14	30.708		
13,500.00	11,690.00	12,091.52	10,456.97	39.85	36.04	-0.01	1,636.35	-97.85	1,233.03	1,191.93	41.10	29.997		
13,600.00	11,690.00	12,191.52	10,456.66	41.30	37.50	-0.01	1,736.35	-97.85	1,233.35	1,191.25	42.10	29.299		
13,700.00	11,690.00	12,291.52	10,456.35	42.78	38.99	-0.01	1,836.35	-97.84	1,233.66	1,190.55	43.11	28.614		
13,800.00	11,690.00	12,391.52	10,456.03	44.28	40.51	-0.01	1,936.35	-97.84	1,233.97	1,189.82	44.16	27.945		
13,900.00	11,690.00	12,491.52	10,455.72	45.80	42.05	-0.01	2,036.35	-97.83	1,234.29	1,189.06	45.22	27.293		
14,000.00	11,690.00	12,591.52	10,455.41	47.35	43.61	-0.01	2,136.35	-97.83	1,234.60	1,188.29	46.31	26.658		
14,100.00	11,690.00	12,691.52	10,455.09	48.92	45.19	-0.01	2,236.35	-97.82	1,234.91	1,187.49	47.42	26.042		
14,200.00	11,690.00	12,791.52	10,454.78	50.50	46.80	-0.01	2,336.34	-97.81	1,235.23	1,186.68	48.55	25.443		
14,300.00	11,690.00	12,891.52	10,454.46	52.10	48.41	-0.01	2,436.34	-97.81	1,235.54	1,185.85	49.69	24.863		
14,400.00	11,690.00	12,991.52	10,454.15	53.72	50.04	-0.01	2,536.34	-97.80	1,235.85	1,185.00	50.86	24.301		
14,500.00	11,690.00	13,091.51	10,453.84	55.35	51.69	-0.01	2,636.34	-97.80	1,236.17	1,184.13	52.03	23.757		
14,600.00	11,690.00	13,191.51	10,453.52	56.98	53.35	-0.01	2,736.34	-97.79	1,236.48	1,183.26	53.22	23.231		
14,700.00	11,690.00	13,291.51	10,453.21	58.64	55.01	-0.01	2,836.34	-97.79	1,236.79	1,182.37	54.43	22.723		
14,800.00	11,690.00	13,391.51	10,452.90	60.30	56.69	-0.01	2,936.34	-97.78	1,237.11	1,181.46	55.65	22.231		
14,900.00	11,690.00	13,491.51	10,452.58	61.97	58.38	-0.01	3,036.34	-97.77	1,237.42	1,180.55	56.88	21.757		
15,000.00	11,690.00	13,591.51	10,452.27	63.65	60.07	-0.01	3,136.34	-97.77	1,237.74	1,179.62	58.12	21.298		
15,100.00	11,690.00	13,691.51	10,451.96	65.33	61.77	-0.01	3,236.34	-97.76	1,238.05	1,178.68	59.37	20.854		
15,200.00	11,690.00	13,791.51	10,451.64	67.03	63.48	-0.01	3,336.33	-97.76	1,238.36	1,177.74	60.63	20.426		

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

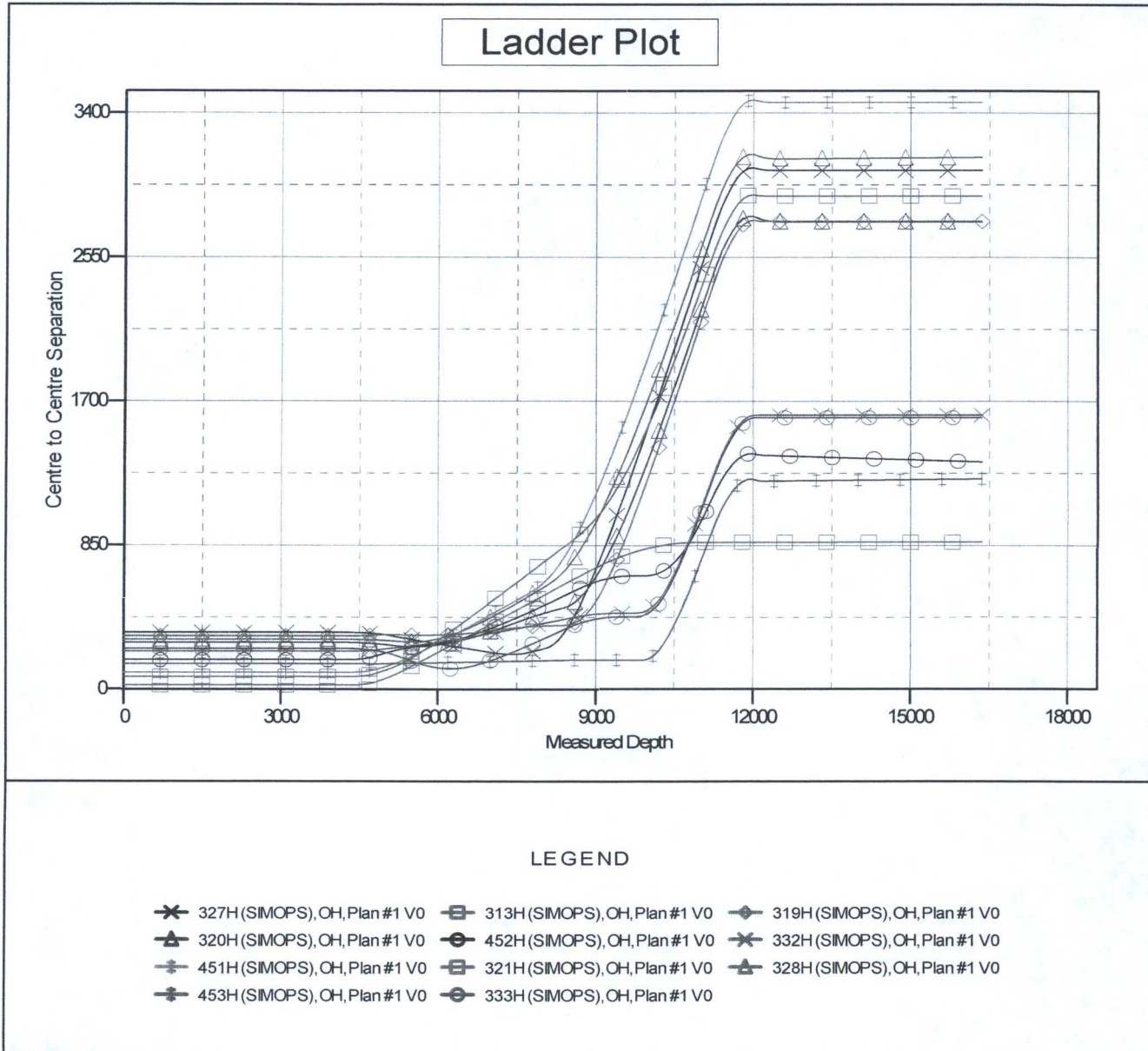
Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	312H (SIMOPS)	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													Offset Site Error:	0.00 usft
Cotton Draw Unit - 453H (SIMOPS) - OH - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														
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		
15,300.00	11,690.00	13,891.51	10,451.33	68.73	65.20	0.00	3,436.33	-97.75	1,238.68	1,176.78	61.90	20.012		
15,400.00	11,690.00	13,991.51	10,451.02	70.44	66.92	0.00	3,536.33	-97.74	1,238.99	1,175.82	63.17	19.613		
15,500.00	11,690.00	14,091.51	10,450.70	72.15	68.65	0.00	3,636.33	-97.74	1,239.30	1,174.85	64.46	19.226		
15,600.00	11,690.00	14,191.51	10,450.39	73.87	70.38	0.00	3,736.33	-97.73	1,239.62	1,173.87	65.75	18.853		
15,700.00	11,690.00	14,291.51	10,450.08	75.59	72.11	0.00	3,836.33	-97.73	1,239.93	1,172.88	67.05	18.492		
15,800.00	11,690.00	14,391.51	10,449.76	77.32	73.86	0.00	3,936.33	-97.72	1,240.24	1,171.89	68.36	18.143		
15,900.00	11,690.00	14,491.51	10,449.45	79.05	75.60	0.00	4,036.33	-97.72	1,240.56	1,170.89	69.67	17.806		
16,000.00	11,690.00	14,591.51	10,449.13	80.79	77.35	0.00	4,136.33	-97.71	1,240.87	1,169.88	70.99	17.479		
16,100.00	11,690.00	14,691.51	10,448.82	82.53	79.10	0.00	4,236.33	-97.70	1,241.19	1,168.87	72.32	17.163		
16,200.00	11,690.00	14,791.51	10,448.51	84.28	80.86	0.00	4,336.33	-97.70	1,241.50	1,167.85	73.65	16.858		
16,300.00	11,690.00	14,891.51	10,448.19	86.02	82.62	0.00	4,436.33	-97.69	1,241.81	1,166.83	74.98	16.561		
16,357.86	11,690.00	14,949.37	10,448.01	87.04	83.63	0.00	4,494.19	-97.69	1,241.99	1,166.24	75.76	16.395		

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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: 312H (SIMOPS)
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.33°

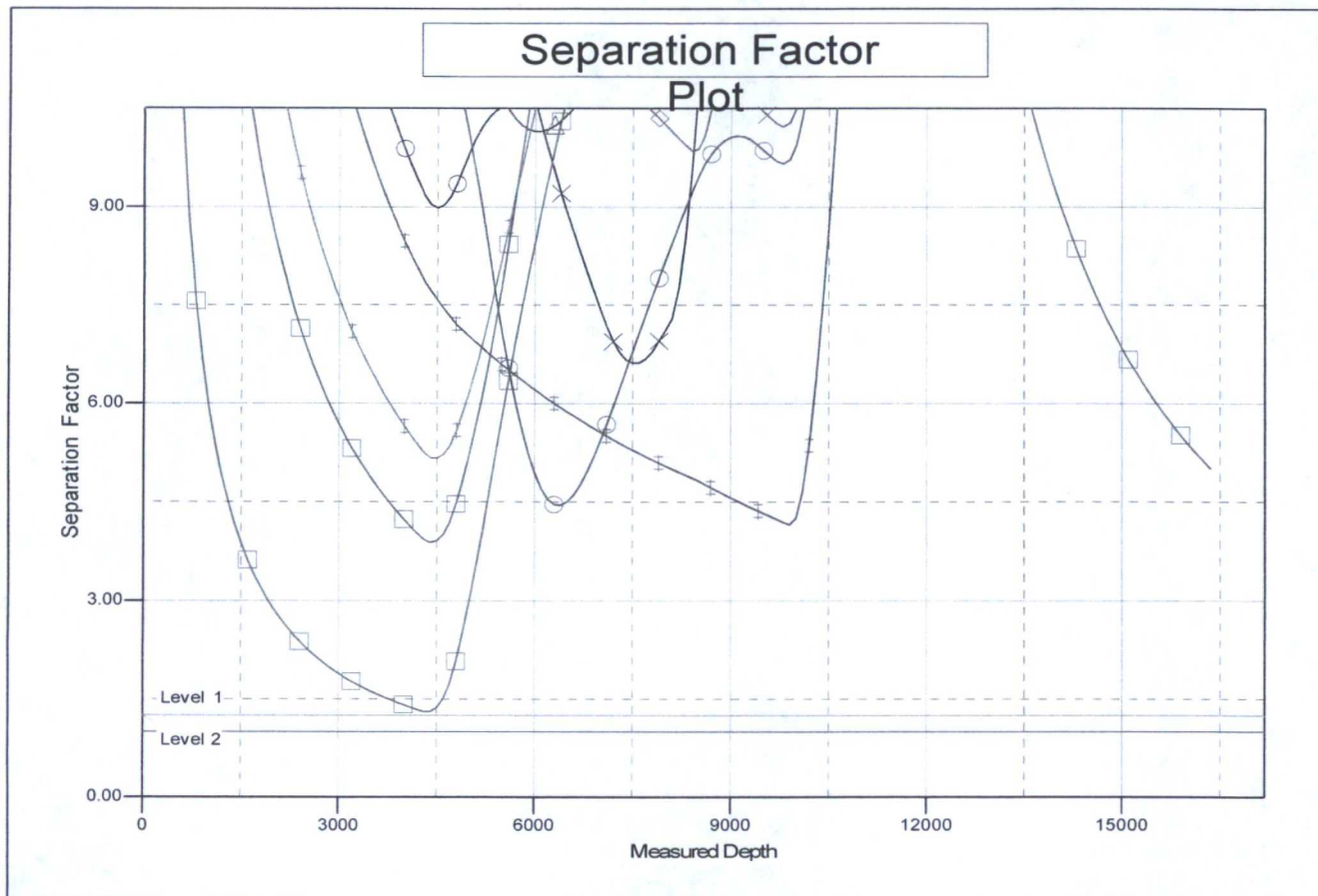


CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 312H (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:	312H (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: 312H (SIMOPS)
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.33°



LEGEND

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|---------------------------------|---------------------------------|---------------------------------|
| ✕ 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 |
| ✕ 453H (SIMOPS), OH, Plan #1 V0 | ○ 333H (SIMOPS), OH, Plan #1 V0 | |