

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit Sec 22-27 Trac Pad

Thistle Unit 86H

OH

Plan #2

Anticollision Report

20 September, 2017

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 9,999.98 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program	Date	9/20/2017
From (usft)	To (usft)	Survey (Wellbore)
0.00	18,058.22	Plan #2 (OH)
		Tool Name
		LEAM MWD+HDGM
		Description
		MWD+HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
Offset Well - Wellbore - Design	Depth (usft)	Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
Thistle Unit Sec 22-27 Trac Pad						
Thistle Unit 110H - OH - Plan #2	3,416.33	3,417.33	60.01	44.93	3.979	CC
Thistle Unit 110H - OH - Plan #2	3,500.00	3,500.99	60.01	44.55	3.882	ES
Thistle Unit 110H - OH - Plan #2	3,600.00	3,600.00	61.11	45.21	3.845	SF
Thistle Unit 114H - OH - Plan #2	5,508.68	5,506.29	277.02	252.50	11.295	CC, ES
Thistle Unit 114H - OH - Plan #2	18,058.37	17,069.55	956.24	802.92	6.237	SF
Thistle Unit 125H - OH - Plan #2	3,500.00	3,500.80	30.02	14.56	1.942	CC
Thistle Unit 125H - OH - Plan #2	3,600.00	3,600.80	30.37	14.46	1.909	ES, SF
Thistle Unit 133H - OH - Plan #2	4,113.33	4,107.71	321.73	303.57	17.711	CC, ES
Thistle Unit 133H - OH - Plan #2	18,058.37	17,487.63	840.20	680.55	5.263	SF
Thistle Unit 142H - OH - Plan #2	2,500.00	2,499.60	90.01	79.05	8.213	CC, ES
Thistle Unit 142H - OH - Plan #2	2,700.00	2,696.44	93.43	81.63	7.915	SF
Thistle Unit 160H - OH - Plan #2	3,000.00	2,999.90	29.94	16.73	2.267	CC, ES
Thistle Unit 160H - OH - Plan #2	9,006.83	9,006.57	62.19	22.41	1.563	SF

Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 110H - OH - Plan #2											Offset Site Error: 0.00 usft		
Survey Program: 0-LEAM MWD+HDGM											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft) +E/-W (usft)		Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
0.00	0.00	1.00	1.00	0.00	0.00	-90.36	-0.38	-60.01	60.01				
100.00	100.00	101.00	101.00	0.09	0.09	-90.36	-0.38	-60.01	60.01	59.84	0.17	344.508	
200.00	200.00	201.00	201.00	0.31	0.31	-90.36	-0.38	-60.01	60.01	59.39	0.62	96.214	
300.00	300.00	301.00	301.00	0.54	0.54	-90.36	-0.38	-60.01	60.01	58.94	1.07	55.915	
400.00	400.00	401.00	401.00	0.76	0.76	-90.36	-0.38	-60.01	60.01	58.49	1.52	39.409	
500.00	500.00	501.00	501.00	0.99	0.99	-90.36	-0.38	-60.01	60.01	58.04	1.97	30.427	
600.00	600.00	601.00	601.00	1.21	1.21	-90.36	-0.38	-60.01	60.01	57.59	2.42	24.779	
700.00	700.00	701.00	701.00	1.43	1.44	-90.36	-0.38	-60.01	60.01	57.14	2.87	20.900	
800.00	800.00	801.00	801.00	1.66	1.66	-90.36	-0.38	-60.01	60.01	56.69	3.32	18.071	
900.00	900.00	901.00	901.00	1.88	1.89	-90.36	-0.38	-60.01	60.01	56.24	3.77	15.916	
1,000.00	1,000.00	1,001.00	1,001.00	2.11	2.11	-90.36	-0.38	-60.01	60.01	55.79	4.22	14.221	
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.34	-90.36	-0.38	-60.01	60.01	55.34	4.67	12.852	
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	-90.36	-0.38	-60.01	60.01	54.89	5.12	11.723	
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.79	-90.36	-0.38	-60.01	60.01	54.44	5.57	10.777	
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	-90.36	-0.38	-60.01	60.01	53.99	6.02	9.972	

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

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Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 110H - OH - Plan #2													Offset Site Error: 0.00 usft		
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
1,500.00	1,500.00	1,501.00	1,501.00	3.23	3.23	-90.36	-0.38	-60.01	60.01	53.54	6.47	9.279			
1,600.00	1,600.00	1,601.00	1,601.00	3.46	3.46	-90.36	-0.38	-60.01	60.01	53.09	6.92	8.676			
1,700.00	1,700.00	1,701.00	1,701.00	3.68	3.68	-90.36	-0.38	-60.01	60.01	52.64	7.37	8.146			
1,800.00	1,800.00	1,801.00	1,801.00	3.91	3.91	-90.36	-0.38	-60.01	60.01	52.19	7.82	7.678			
1,900.00	1,900.00	1,901.00	1,901.00	4.13	4.13	-90.36	-0.38	-60.01	60.01	51.75	8.27	7.260			
2,000.00	2,000.00	2,001.00	2,001.00	4.36	4.36	-90.36	-0.38	-60.01	60.01	51.30	8.72	6.886			
2,100.00	2,100.00	2,101.00	2,101.00	4.58	4.58	-90.36	-0.38	-60.01	60.01	50.85	9.16	6.548			
2,200.00	2,200.00	2,201.00	2,201.00	4.81	4.81	-90.36	-0.38	-60.01	60.01	50.40	9.61	6.242			
2,300.00	2,300.00	2,301.00	2,301.00	5.03	5.03	-90.36	-0.38	-60.01	60.01	49.95	10.06	5.963			
2,400.00	2,400.00	2,401.00	2,401.00	5.26	5.26	-90.36	-0.38	-60.01	60.01	49.50	10.51	5.708			
2,500.00	2,500.00	2,501.00	2,501.00	5.48	5.48	-90.36	-0.38	-60.01	60.01	49.05	10.96	5.474			
2,600.00	2,600.00	2,601.00	2,601.00	5.71	5.71	-90.36	-0.38	-60.01	60.01	48.60	11.41	5.258			
2,700.00	2,700.00	2,701.00	2,701.00	5.93	5.93	-90.36	-0.38	-60.01	60.01	48.15	11.86	5.059			
2,800.00	2,800.00	2,801.00	2,801.00	6.15	6.16	-90.36	-0.38	-60.01	60.01	47.70	12.31	4.874			
2,900.00	2,900.00	2,901.00	2,901.00	6.38	6.38	-90.36	-0.38	-60.01	60.01	47.25	12.76	4.703			
3,000.00	3,000.00	3,001.00	3,001.00	6.60	6.61	-90.36	-0.38	-60.01	60.01	46.80	13.21	4.543			
3,100.00	3,100.00	3,101.00	3,101.00	6.83	6.83	-90.36	-0.38	-60.01	60.01	46.35	13.66	4.393			
3,200.00	3,200.00	3,201.00	3,201.00	7.05	7.06	-90.36	-0.38	-60.01	60.01	45.90	14.11	4.253			
3,300.00	3,300.00	3,301.00	3,301.00	7.28	7.28	-90.36	-0.38	-60.01	60.01	45.45	14.56	4.122			
3,400.00	3,400.00	3,401.00	3,401.00	7.50	7.51	-90.36	-0.38	-60.01	60.01	45.00	15.01	3.998			
3,416.33	3,416.33	3,417.33	3,417.33	7.54	7.54	-90.36	-0.38	-60.01	60.01	44.93	15.08	3.979 CC			
3,500.00	3,500.00	3,500.99	3,500.99	7.73	7.73	-90.36	-0.38	-60.01	60.01	44.55	15.46	3.882 ES			
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-112.90	0.06	-60.77	61.11	45.21	15.89	3.845 SF			
3,700.00	3,699.96	3,699.10	3,699.06	8.17	8.16	-113.82	1.35	-63.01	64.38	48.06	16.32	3.945			
3,800.00	3,799.86	3,797.95	3,797.82	8.40	8.37	-115.17	3.49	-66.72	69.86	53.11	16.74	4.172			
3,844.08	3,843.87	3,841.46	3,841.26	8.50	8.46	-115.84	4.70	-68.82	72.98	56.05	16.93	4.311			
3,900.00	3,899.69	3,896.60	3,896.28	8.62	8.58	-116.59	6.48	-71.89	77.44	60.28	17.16	4.512			
4,000.00	3,999.51	3,995.74	3,995.15	8.85	8.80	-117.34	10.18	-78.31	86.30	68.71	17.59	4.906			
4,100.00	4,099.33	4,095.33	4,094.45	9.07	9.02	-117.90	13.97	-84.88	95.28	77.25	18.03	5.286			
4,200.00	4,199.15	4,194.93	4,193.75	9.29	9.24	-118.37	17.76	-91.45	104.27	85.80	18.46	5.647			
4,300.00	4,298.97	4,294.52	4,293.06	9.52	9.46	-118.77	21.54	-98.01	113.26	94.36	18.90	5.992			
4,400.00	4,398.79	4,394.11	4,392.36	9.75	9.68	-119.10	25.33	-104.58	122.26	102.92	19.35	6.320			
4,500.00	4,498.61	4,493.70	4,491.66	9.97	9.91	-119.39	29.12	-111.15	131.27	111.48	19.79	6.634			
4,600.00	4,498.43	4,493.29	4,490.97	10.20	10.13	-119.64	32.91	-117.71	140.27	120.04	20.23	6.933			
4,700.00	4,498.25	4,492.89	4,490.27	10.43	10.36	-119.86	36.70	-124.28	149.28	128.60	20.68	7.219			
4,800.00	4,798.07	4,792.48	4,789.57	10.66	10.59	-120.06	40.49	-130.85	158.29	137.17	21.13	7.493			
4,900.00	4,897.89	4,892.07	4,888.87	10.89	10.82	-120.24	44.28	-137.42	167.30	145.73	21.57	7.755			
5,000.00	4,997.71	4,991.66	4,988.18	11.12	11.05	-120.39	48.07	-143.98	176.32	154.29	22.02	8.005			
5,100.00	5,097.53	5,091.25	5,087.48	11.35	11.29	-120.53	51.85	-150.55	185.33	162.86	22.48	8.246			
5,200.00	5,197.35	5,190.84	5,186.78	11.58	11.52	-120.66	55.64	-157.12	194.35	171.42	22.93	8.477			
5,300.00	5,297.17	5,290.44	5,286.09	11.81	11.75	-120.78	59.43	-163.68	203.36	179.98	23.38	8.698			
5,400.00	5,396.99	5,390.03	5,385.39	12.04	11.99	-120.89	63.22	-170.25	212.38	188.55	23.83	8.911			
5,500.00	5,496.81	5,489.62	5,484.69	12.27	12.22	-120.99	67.01	-176.82	221.40	197.11	24.29	9.116			
5,600.00	5,596.63	5,589.21	5,583.99	12.51	12.46	-121.08	70.80	-183.38	230.42	205.67	24.74	9.312			
5,659.61	5,656.13	5,648.58	5,643.19	12.64	12.60	-121.13	73.06	-187.30	235.79	210.78	25.02	9.426			
5,700.00	5,696.46	5,688.81	5,683.30	12.73	12.70	-121.16	74.59	-189.95	239.36	214.18	25.19	9.503			
5,800.00	5,796.36	5,788.47	5,782.67	12.91	12.94	-121.00	78.38	-196.52	247.57	221.98	25.59	9.674			
5,900.00	5,896.32	5,888.17	5,882.08	13.08	13.17	-120.51	82.17	-203.10	254.90	228.91	25.99	9.807			
6,003.69	6,000.00	5,991.56	5,985.17	13.26	13.42	-97.46	86.10	-209.91	261.60	235.20	26.40	9.908			
6,100.00	6,096.31	6,087.59	6,080.93	13.45	13.65	-96.50	89.76	-216.25	267.47	240.66	26.81	9.977			
6,200.00	6,196.31	6,187.30	6,180.35	13.67	13.89	-95.56	93.55	-222.82	273.63	246.38	27.25	10.040			
6,300.00	6,296.31	6,287.01	6,279.77	13.89	14.13	-94.65	97.34	-229.40	279.87	252.17	27.70	10.104			

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

LEAM Drilling Systems LLC

Anticollision Report

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Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 110H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
6,400.00	6,396.31	6,386.72	6,379.19	14.12	14.38	-93.79	101.14	-235.97	286.17	258.02	28.15	10.167		
6,500.00	6,496.31	6,486.43	6,478.61	14.34	14.62	-92.96	104.93	-242.55	292.53	263.94	28.59	10.231		
6,600.00	6,596.31	6,586.14	6,578.03	14.56	14.86	-92.17	108.72	-249.12	298.96	269.92	29.04	10.295		
6,700.00	6,696.31	6,687.36	6,678.96	14.78	15.10	-91.41	112.53	-255.71	305.36	275.87	29.49	10.355		
6,800.00	6,796.31	6,791.99	6,783.40	15.00	15.30	-90.79	115.73	-261.26	310.60	280.68	29.92	10.380		
6,900.00	6,896.31	6,896.83	6,888.13	15.23	15.49	-90.37	117.98	-265.17	314.31	283.96	30.35	10.357		
7,000.00	6,996.31	7,001.79	6,993.06	15.45	15.68	-90.13	119.27	-267.41	316.44	285.67	30.77	10.285		
7,100.00	7,096.31	7,106.04	7,097.31	15.67	15.87	-90.07	119.62	-268.01	317.01	285.83	31.18	10.167		
7,200.00	7,196.31	7,206.04	7,197.31	15.89	16.09	-90.07	119.62	-268.01	317.01	285.39	31.62	10.025		
7,300.00	7,296.31	7,306.04	7,297.31	16.12	16.30	-90.07	119.62	-268.01	317.01	284.95	32.06	9.887		
7,400.00	7,396.31	7,406.04	7,397.31	16.34	16.52	-90.07	119.62	-268.01	317.01	284.51	32.50	9.753		
7,500.00	7,496.31	7,506.04	7,497.31	16.56	16.73	-90.07	119.62	-268.01	317.01	284.06	32.95	9.622		
7,600.00	7,596.31	7,606.04	7,597.31	16.78	16.95	-90.07	119.62	-268.01	317.01	283.62	33.39	9.494		
7,700.00	7,696.31	7,706.04	7,697.31	17.01	17.17	-90.07	119.62	-268.01	317.01	283.18	33.83	9.370		
7,800.00	7,796.31	7,806.04	7,797.31	17.23	17.39	-90.07	119.62	-268.01	317.01	282.74	34.27	9.249		
7,900.00	7,896.31	7,906.04	7,897.31	17.45	17.60	-90.07	119.62	-268.01	317.01	282.29	34.72	9.131		
8,000.00	7,996.31	8,006.04	7,997.31	17.68	17.82	-90.07	119.62	-268.01	317.01	281.85	35.16	9.016		
8,100.00	8,096.31	8,106.04	8,097.31	17.90	18.04	-90.07	119.62	-268.01	317.01	281.41	35.60	8.904		
8,200.00	8,196.31	8,206.04	8,197.31	18.12	18.26	-90.07	119.62	-268.01	317.01	280.96	36.05	8.794		
8,300.00	8,296.31	8,306.04	8,297.31	18.34	18.47	-90.07	119.62	-268.01	317.01	280.52	36.49	8.687		
8,400.00	8,396.31	8,406.04	8,397.31	18.57	18.69	-90.07	119.62	-268.01	317.01	280.08	36.93	8.583		
8,500.00	8,496.31	8,506.04	8,497.31	18.79	18.91	-90.07	119.62	-268.01	317.01	279.63	37.38	8.481		
8,600.00	8,596.31	8,606.04	8,597.31	19.01	19.13	-90.07	119.62	-268.01	317.01	279.19	37.82	8.381		
8,700.00	8,696.31	8,706.04	8,697.31	19.24	19.35	-90.07	119.62	-268.01	317.01	278.74	38.27	8.284		
8,800.00	8,796.31	8,806.04	8,797.31	19.46	19.57	-90.07	119.62	-268.01	317.01	278.30	38.71	8.189		
8,900.00	8,896.31	8,906.04	8,897.31	19.68	19.79	-90.07	119.62	-268.01	317.01	277.85	39.16	8.096		
9,000.00	8,996.31	9,006.04	8,997.31	19.91	20.00	-90.07	119.62	-268.01	317.01	277.41	39.60	8.005		
9,100.00	9,096.31	9,106.04	9,097.31	20.13	20.22	-90.07	119.62	-268.01	317.01	276.97	40.04	7.916		
9,200.00	9,196.31	9,206.12	9,197.35	20.35	20.43	-90.33	118.20	-268.00	317.00	276.53	40.48	7.832		
9,206.95	9,203.26	9,213.05	9,204.26	20.37	20.44	-90.42	117.67	-268.00	317.00	276.50	40.50	7.826		
9,300.00	9,296.31	9,303.79	9,293.73	20.58	20.59	-93.06	103.08	-267.89	317.36	276.50	40.86	7.768		
9,400.00	9,396.31	9,393.98	9,379.26	20.80	20.71	-98.13	74.77	-267.68	320.40	279.23	41.17	7.782		
9,500.00	9,496.31	9,473.69	9,450.35	21.03	20.82	-104.38	38.86	-267.42	330.01	288.77	41.25	8.001		
9,600.00	9,596.31	9,542.11	9,506.90	21.25	20.91	-110.72	0.41	-267.13	349.88	309.04	40.84	8.567		
9,700.00	9,696.31	9,600.00	9,550.88	21.47	20.98	-116.46	-37.19	-266.86	381.99	342.13	39.86	9.583		
9,800.00	9,796.31	9,650.00	9,585.65	21.70	21.04	-121.46	-73.09	-266.59	426.25	387.75	38.50	11.072		
9,900.00	9,896.31	9,689.33	9,610.72	21.92	21.09	-125.31	-103.39	-266.37	481.14	444.25	36.89	13.041		
10,000.00	9,996.31	9,723.80	9,630.94	22.14	21.15	-128.57	-131.29	-266.17	544.71	509.32	35.38	15.394		
10,030.73	10,027.04	9,733.30	9,636.22	22.21	21.16	-129.44	-139.20	-266.11	565.69	530.74	34.95	16.185		
10,050.00	10,046.31	9,750.00	9,645.17	22.25	21.19	48.14	-153.30	-266.01	579.19	544.23	34.96	16.566		
10,100.00	10,096.15	9,750.00	9,645.17	22.33	21.19	44.79	-153.30	-266.01	613.15	579.27	33.88	18.098		
10,150.00	10,145.45	9,771.28	9,655.97	22.41	21.24	40.41	-171.63	-265.87	646.34	612.99	33.35	19.378		
10,200.00	10,193.86	9,800.00	9,669.46	22.48	21.30	36.38	-196.98	-265.68	678.63	645.63	33.01	20.560		
10,250.00	10,241.00	9,800.00	9,669.46	22.56	21.30	34.15	-196.98	-265.68	709.18	677.15	32.03	22.139		
10,300.00	10,286.51	9,823.43	9,679.51	22.63	21.37	31.40	-218.14	-265.53	738.29	706.68	31.60	23.361		
10,350.00	10,330.05	9,850.00	9,689.85	22.70	21.44	29.02	-242.61	-265.35	765.82	734.58	31.25	24.509		
10,400.00	10,371.27	9,850.00	9,689.85	22.77	21.44	27.61	-242.61	-265.35	791.45	761.02	30.43	26.009		
10,450.00	10,409.88	9,878.81	9,699.77	22.83	21.54	25.85	-269.66	-265.15	814.92	784.75	30.17	27.011		
10,500.00	10,445.58	9,900.00	9,706.19	22.89	21.62	24.52	-289.85	-265.00	836.47	806.66	29.81	28.061		
10,550.00	10,478.09	9,916.94	9,710.78	22.96	21.68	23.45	-306.15	-264.88	855.85	826.42	29.43	29.078		
10,600.00	10,507.17	9,950.00	9,718.35	23.05	21.82	22.41	-338.33	-264.65	873.27	843.96	29.31	29.793		
10,650.00	10,532.59	9,950.00	9,718.35	23.17	21.82	21.83	-338.33	-264.65	887.93	859.08	28.85	30.773		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 110H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,700.00	10,554.17	9,975.32	9,722.88	23.31	21.93	21.19	-363.24	-264.46	900.41	871.66	28.75	31.319		
10,750.00	10,571.73	10,000.00	9,726.24	23.47	22.05	20.70	-387.69	-264.28	910.59	881.90	28.69	31.741		
10,800.00	10,585.15	10,000.00	9,726.24	23.65	22.05	20.42	-387.69	-264.28	918.58	890.04	28.54	32.185		
10,850.00	10,594.32	10,034.54	9,729.16	23.86	22.22	20.14	-422.09	-264.03	923.56	894.89	28.67	32.213		
10,900.00	10,599.17	10,054.36	9,729.89	24.08	22.32	20.02	-441.91	-263.89	926.38	897.59	28.79	32.177		
10,929.52	10,600.00	10,070.80	9,730.04	24.22	22.41	20.00	-458.34	-263.76	926.86	897.96	28.91	32.064		
11,000.00	10,600.15	10,141.28	9,730.39	24.60	22.83	20.00	-528.82	-263.25	926.68	897.37	29.31	31.621		
11,100.00	10,600.36	10,241.28	9,730.88	25.21	23.50	20.01	-628.81	-262.51	926.41	896.47	29.95	30.937		
11,200.00	10,600.57	10,341.28	9,731.37	25.90	24.26	20.02	-728.81	-261.78	926.15	895.47	30.67	30.192		
11,300.00	10,600.78	10,441.28	9,731.86	26.69	25.10	20.02	-828.80	-261.04	925.89	894.40	31.49	29.405		
11,400.00	10,600.99	10,541.28	9,732.35	27.54	26.02	20.03	-928.80	-260.31	925.62	893.24	32.38	28.588		
11,500.00	10,601.20	10,641.28	9,732.84	28.47	27.01	20.03	-1,028.79	-259.57	925.36	892.02	33.34	27.756		
11,600.00	10,601.41	10,741.27	9,733.33	29.46	28.05	20.04	-1,128.79	-258.84	925.09	890.73	34.37	26.919		
11,700.00	10,601.62	10,841.27	9,733.82	30.50	29.16	20.04	-1,228.79	-258.11	924.83	889.38	35.45	26.087		
11,800.00	10,601.83	10,941.27	9,734.31	31.59	30.31	20.05	-1,328.78	-257.37	924.57	887.98	36.59	25.267		
11,900.00	10,602.04	11,041.27	9,734.80	32.73	31.50	20.06	-1,428.78	-256.64	924.30	886.52	37.78	24.465		
12,000.00	10,602.25	11,141.27	9,735.29	33.91	32.73	20.06	-1,528.77	-255.90	924.04	885.02	39.02	23.684		
12,100.00	10,602.46	11,241.27	9,735.78	35.13	34.00	20.07	-1,628.77	-255.17	923.78	883.48	40.29	22.927		
12,200.00	10,602.67	11,341.27	9,736.27	36.38	35.30	20.07	-1,728.76	-254.43	923.51	881.91	41.60	22.198		
12,300.00	10,602.88	11,441.27	9,736.76	37.66	36.62	20.08	-1,828.76	-253.70	923.25	880.30	42.95	21.496		
12,400.00	10,603.09	11,541.27	9,737.26	38.97	37.97	20.09	-1,928.76	-252.96	922.99	878.66	44.33	20.822		
12,500.00	10,603.30	11,641.27	9,737.75	40.30	39.34	20.09	-2,028.75	-252.23	922.72	876.99	45.73	20.176		
12,600.00	10,603.51	11,741.27	9,738.24	41.66	40.73	20.10	-2,128.75	-251.50	922.46	875.29	47.16	19.558		
12,700.00	10,603.72	11,841.27	9,738.73	43.03	42.14	20.10	-2,228.74	-250.76	922.20	873.58	48.62	18.968		
12,800.00	10,603.93	11,941.27	9,739.22	44.42	43.57	20.11	-2,328.74	-250.03	921.93	871.84	50.09	18.404		
12,900.00	10,604.14	12,041.27	9,739.71	45.83	45.01	20.12	-2,428.73	-249.29	921.67	870.08	51.59	17.865		
13,000.00	10,604.35	12,141.27	9,740.20	47.25	46.46	20.12	-2,528.73	-248.56	921.40	868.30	53.10	17.351		
13,100.00	10,604.56	12,241.27	9,740.69	48.69	47.92	20.13	-2,628.73	-247.82	921.14	866.51	54.63	16.861		
13,200.00	10,604.78	12,341.27	9,741.18	50.14	49.40	20.13	-2,728.72	-247.09	920.88	864.70	56.18	16.392		
13,300.00	10,604.99	12,441.27	9,741.67	51.60	50.89	20.14	-2,828.72	-246.35	920.61	862.88	57.74	15.945		
13,400.00	10,605.20	12,541.27	9,742.16	53.07	52.38	20.15	-2,928.71	-245.62	920.35	861.04	59.31	15.518		
13,500.00	10,605.41	12,641.27	9,742.65	54.55	53.88	20.15	-3,028.71	-244.89	920.09	859.19	60.89	15.110		
13,600.00	10,605.62	12,741.27	9,743.14	56.04	55.39	20.16	-3,128.70	-244.15	919.82	857.34	62.49	14.720		
13,700.00	10,605.83	12,841.27	9,743.64	57.53	56.91	20.16	-3,228.70	-243.42	919.56	855.47	64.09	14.347		
13,800.00	10,606.04	12,941.27	9,744.13	59.04	58.44	20.17	-3,328.70	-242.68	919.30	853.59	65.71	13.991		
13,900.00	10,606.25	13,041.27	9,744.62	60.55	59.97	20.18	-3,428.69	-241.95	919.03	851.70	67.33	13.649		
14,000.00	10,606.46	13,141.27	9,745.11	62.07	61.50	20.18	-3,528.69	-241.21	918.77	849.81	68.96	13.322		
14,100.00	10,606.67	13,241.27	9,745.60	63.59	63.05	20.19	-3,628.68	-240.48	918.51	847.90	70.60	13.009		
14,200.00	10,606.88	13,341.26	9,746.09	65.12	64.59	20.19	-3,728.68	-239.74	918.24	845.99	72.25	12.709		
14,300.00	10,607.09	13,441.26	9,746.58	66.66	66.14	20.20	-3,828.67	-239.01	917.98	844.07	73.91	12.421		
14,400.00	10,607.30	13,541.26	9,747.07	68.20	67.70	20.21	-3,928.67	-238.28	917.72	842.15	75.57	12.145		
14,500.00	10,607.51	13,641.26	9,747.56	69.74	69.26	20.21	-4,028.67	-237.54	917.45	840.22	77.23	11.879		
14,600.00	10,607.72	13,741.26	9,748.05	71.29	70.82	20.22	-4,128.66	-236.81	917.19	838.29	78.90	11.624		
14,700.00	10,607.93	13,841.26	9,748.54	72.84	72.38	20.22	-4,228.66	-236.07	916.93	836.35	80.58	11.379		
14,800.00	10,608.14	13,941.26	9,749.03	74.40	73.95	20.23	-4,328.65	-235.34	916.66	834.40	82.26	11.143		
14,900.00	10,608.35	14,041.26	9,749.52	75.96	75.52	20.24	-4,428.65	-234.60	916.40	832.45	83.95	10.916		
15,000.00	10,608.56	14,141.26	9,750.01	77.52	77.10	20.24	-4,528.64	-233.87	916.14	830.49	85.64	10.697		
15,100.00	10,608.77	14,241.26	9,750.51	79.09	78.68	20.25	-4,628.64	-233.13	915.87	828.54	87.34	10.487		
15,200.00	10,608.98	14,341.26	9,751.00	80.66	80.26	20.25	-4,728.64	-232.40	915.61	826.57	89.04	10.283		
15,300.00	10,609.19	14,441.26	9,751.49	82.23	81.84	20.26	-4,828.63	-231.66	915.35	824.61	90.74	10.087		
15,400.00	10,609.41	14,541.26	9,751.98	83.80	83.42	20.27	-4,928.63	-230.93	915.08	822.64	92.45	9.898		
15,500.00	10,609.62	14,641.26	9,752.47	85.38	85.01	20.27	-5,028.62	-230.20	914.82	820.66	94.16	9.716		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 110H - OH - Plan #2											Offset Site Error: 0.00 usft		
Survey Program: O-LEAM MWD+HDGM											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	
15,600.00	10,609.83	14,741.26	9,752.96	86.96	86.60	20.28	-5,128.62	-229.46	914.56	818.69	95.87	9.539	
15,700.00	10,610.04	14,841.26	9,753.45	88.54	88.19	20.28	-5,228.61	-228.73	914.29	816.70	97.59	9.369	
15,800.00	10,610.25	14,941.26	9,753.94	90.12	89.78	20.29	-5,328.61	-227.99	914.03	814.72	99.31	9.204	
15,900.00	10,610.46	15,041.26	9,754.43	91.71	91.37	20.30	-5,428.61	-227.26	913.77	812.74	101.03	9.044	
16,000.00	10,610.67	15,141.26	9,754.92	93.29	92.97	20.30	-5,528.60	-226.52	913.50	810.75	102.76	8.890	
16,100.00	10,610.88	15,241.26	9,755.41	94.88	94.56	20.31	-5,628.60	-225.79	913.24	808.76	104.49	8.740	
16,200.00	10,611.09	15,341.26	9,755.90	96.47	96.16	20.31	-5,728.59	-225.05	912.98	806.76	106.22	8.596	
16,300.00	10,611.30	15,441.26	9,756.39	98.07	97.76	20.32	-5,828.59	-224.32	912.72	804.77	107.95	8.455	
16,400.00	10,611.51	15,541.26	9,756.89	99.66	99.36	20.33	-5,928.58	-223.59	912.45	802.77	109.68	8.319	
16,500.00	10,611.72	15,641.26	9,757.38	101.25	100.97	20.33	-6,028.58	-222.85	912.19	800.77	111.42	8.187	
16,600.00	10,611.93	15,741.26	9,757.87	102.85	102.57	20.34	-6,128.58	-222.12	911.93	798.76	113.16	8.059	
16,700.00	10,612.14	15,841.25	9,758.36	104.45	104.17	20.34	-6,228.57	-221.38	911.66	796.76	114.90	7.934	
16,800.00	10,612.35	15,941.25	9,758.85	106.05	105.78	20.35	-6,328.57	-220.65	911.40	794.75	116.65	7.813	
16,900.00	10,612.56	16,041.25	9,759.34	107.65	107.38	20.36	-6,428.56	-219.91	911.14	792.75	118.39	7.696	
17,000.00	10,612.77	16,141.25	9,759.83	109.25	108.99	20.36	-6,528.56	-219.18	910.87	790.73	120.14	7.582	
17,100.00	10,612.98	16,241.25	9,760.32	110.85	110.60	20.37	-6,628.55	-218.44	910.61	788.72	121.89	7.471	
17,200.00	10,613.19	16,341.25	9,760.81	112.46	112.21	20.37	-6,728.55	-217.71	910.35	786.71	123.64	7.363	
17,300.00	10,613.40	16,441.25	9,761.30	114.06	113.82	20.38	-6,828.55	-216.98	910.08	784.69	125.39	7.258	
17,400.00	10,613.61	16,541.25	9,761.79	115.67	115.43	20.39	-6,928.54	-216.24	909.82	782.68	127.14	7.156	
17,500.00	10,613.83	16,641.25	9,762.28	117.27	117.04	20.39	-7,028.54	-215.51	909.56	780.66	128.90	7.056	
17,600.00	10,614.04	16,741.25	9,762.77	118.88	118.65	20.40	-7,128.53	-214.77	909.29	778.64	130.66	6.959	
17,700.00	10,614.25	16,841.25	9,763.26	120.49	120.27	20.41	-7,228.53	-214.04	909.03	776.62	132.42	6.865	
17,800.00	10,614.46	16,941.25	9,763.76	122.10	121.88	20.41	-7,328.52	-213.30	908.77	774.59	134.17	6.773	
17,900.00	10,614.67	17,041.25	9,764.25	123.71	123.50	20.42	-7,428.52	-212.57	908.51	772.57	135.94	6.683	
18,000.00	10,614.88	17,141.25	9,764.74	125.32	125.11	20.42	-7,528.52	-211.83	908.24	770.54	137.70	6.596	
18,056.47	10,615.00	17,195.33	9,765.00	126.23	125.98	20.43	-7,582.60	-211.44	908.10	769.42	138.68	6.548	
18,058.37	10,615.00	17,195.33	9,765.00	126.26	125.98	20.43	-7,582.60	-211.44	908.10	769.40	138.70	6.547	

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 114H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM													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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
							+N/-S (usft)	+E/-W (usft)						
0.00	0.00	1.10	1.10	0.00	0.00	89.67	1.71	299.88	299.88					
100.00	100.00	101.10	101.10	0.09	0.09	89.67	1.71	299.88	299.88	299.71	0.17	1,719.339		
200.00	200.00	201.10	201.10	0.31	0.31	89.67	1.71	299.88	299.88	299.26	0.62	480.623		
300.00	300.00	301.10	301.10	0.54	0.54	89.67	1.71	299.88	299.88	298.81	1.07	279.357		
400.00	400.00	401.10	401.10	0.76	0.76	89.67	1.71	299.88	299.88	298.36	1.52	196.902		
500.00	500.00	501.10	501.10	0.99	0.99	89.67	1.71	299.88	299.88	297.91	1.97	152.029		
600.00	600.00	601.10	601.10	1.21	1.21	89.67	1.71	299.88	299.88	297.46	2.42	123.813		
700.00	700.00	701.10	701.10	1.43	1.44	89.67	1.71	299.88	299.88	297.01	2.87	104.431		
800.00	800.00	801.10	801.10	1.66	1.66	89.67	1.71	299.88	299.88	296.56	3.32	90.296		
900.00	900.00	901.10	901.10	1.88	1.89	89.67	1.71	299.88	299.88	296.11	3.77	79.531		
1,000.00	1,000.00	1,001.10	1,001.10	2.11	2.11	89.67	1.71	299.88	299.88	295.66	4.22	71.059		
1,100.00	1,100.00	1,101.10	1,101.10	2.33	2.34	89.67	1.71	299.88	299.88	295.22	4.67	64.219		
1,200.00	1,200.00	1,201.10	1,201.10	2.56	2.56	89.67	1.71	299.88	299.88	294.77	5.12	58.580		
1,300.00	1,300.00	1,301.10	1,301.10	2.78	2.79	89.67	1.71	299.88	299.88	294.32	5.57	53.851		
1,400.00	1,400.00	1,401.10	1,401.10	3.01	3.01	89.67	1.71	299.88	299.88	293.87	6.02	49.829		
1,500.00	1,500.00	1,501.10	1,501.10	3.23	3.24	89.67	1.71	299.88	299.88	293.42	6.47	46.365		
1,600.00	1,600.00	1,601.10	1,601.10	3.46	3.46	89.67	1.71	299.88	299.88	292.97	6.92	43.352		
1,700.00	1,700.00	1,701.10	1,701.10	3.68	3.68	89.67	1.71	299.88	299.88	292.52	7.37	40.707		
1,800.00	1,800.00	1,801.10	1,801.10	3.91	3.91	89.67	1.71	299.88	299.88	292.07	7.82	38.366		
1,900.00	1,900.00	1,901.10	1,901.10	4.13	4.13	89.67	1.71	299.88	299.88	291.62	8.27	36.279		
2,000.00	2,000.00	2,001.10	2,001.10	4.36	4.36	89.67	1.71	299.88	299.88	291.17	8.72	34.408		
2,100.00	2,100.00	2,101.10	2,101.10	4.58	4.58	89.67	1.71	299.88	299.88	290.72	9.17	32.720		
2,200.00	2,200.00	2,201.10	2,201.10	4.81	4.81	89.67	1.71	299.88	299.88	290.27	9.61	31.191		
2,300.00	2,300.00	2,301.10	2,301.10	5.03	5.03	89.67	1.71	299.88	299.88	289.82	10.06	29.797		
2,400.00	2,400.00	2,401.10	2,401.10	5.26	5.26	89.67	1.71	299.88	299.88	289.37	10.51	28.523		
2,500.00	2,500.00	2,501.10	2,501.10	5.48	5.48	89.67	1.71	299.88	299.88	288.92	10.96	27.354		
2,600.00	2,600.00	2,601.10	2,601.10	5.71	5.71	89.67	1.71	299.88	299.88	288.47	11.41	26.276		
2,700.00	2,700.00	2,701.10	2,701.10	5.93	5.93	89.67	1.71	299.88	299.88	288.02	11.86	25.281		
2,800.00	2,800.00	2,801.10	2,801.10	6.15	6.16	89.67	1.71	299.88	299.88	287.57	12.31	24.358		
2,900.00	2,900.00	2,901.10	2,901.10	6.38	6.38	89.67	1.71	299.88	299.88	287.12	12.76	23.500		
3,000.00	3,000.00	3,001.10	3,001.10	6.60	6.61	89.67	1.71	299.88	299.88	286.67	13.21	22.700		
3,100.00	3,100.00	3,101.10	3,101.10	6.83	6.83	89.67	1.71	299.88	299.88	286.22	13.66	21.953		
3,200.00	3,200.00	3,201.10	3,201.10	7.05	7.06	89.67	1.71	299.88	299.88	285.77	14.11	21.253		
3,300.00	3,300.00	3,301.10	3,301.10	7.28	7.28	89.67	1.71	299.88	299.88	285.33	14.56	20.597		
3,400.00	3,400.00	3,401.10	3,401.10	7.50	7.51	89.67	1.71	299.88	299.88	284.88	15.01	19.980		
3,500.00	3,500.00	3,501.10	3,501.10	7.73	7.73	89.67	1.71	299.88	299.88	284.43	15.46	19.399		
3,600.00	3,600.00	3,601.10	3,601.10	7.95	7.96	67.62	1.71	299.88	299.55	283.64	15.91	18.832		
3,700.00	3,699.96	3,701.06	3,701.06	8.17	8.18	68.09	1.71	299.88	298.56	282.21	16.35	18.258		
3,800.00	3,799.86	3,800.96	3,800.96	8.40	8.40	68.89	1.71	299.88	296.96	280.17	16.80	17.678		
3,844.08	3,843.87	3,844.97	3,844.97	8.50	8.50	69.34	1.71	299.88	296.08	279.08	17.00	17.421		
3,900.00	3,899.69	3,900.79	3,900.79	8.62	8.63	69.95	1.71	299.88	294.91	277.67	17.24	17.102		
4,000.00	3,999.51	4,000.61	4,000.61	8.85	8.85	71.05	1.71	299.88	292.90	275.21	17.69	16.556		
4,100.00	4,099.33	4,100.43	4,100.43	9.07	9.08	72.17	1.71	299.88	291.01	272.87	18.14	16.043		
4,200.00	4,199.15	4,200.25	4,200.25	9.29	9.30	73.30	1.71	299.88	289.22	270.64	18.59	15.560		
4,300.00	4,298.97	4,300.07	4,300.07	9.52	9.53	74.44	1.71	299.88	287.55	268.52	19.04	15.105		
4,400.00	4,398.79	4,399.89	4,399.89	9.75	9.75	75.60	1.71	299.88	286.00	266.51	19.49	14.676		
4,500.00	4,498.61	4,499.71	4,499.71	9.97	9.98	76.77	1.71	299.88	284.56	264.62	19.94	14.271		
4,600.00	4,598.43	4,599.53	4,599.53	10.20	10.20	77.95	1.71	299.88	283.25	262.86	20.39	13.891		
4,700.00	4,698.25	4,699.35	4,699.35	10.43	10.42	79.14	1.71	299.88	282.05	261.21	20.84	13.532		
4,800.00	4,798.07	4,799.17	4,799.17	10.66	10.65	80.34	1.71	299.88	280.98	259.68	21.30	13.193		
4,900.00	4,897.89	4,898.99	4,898.99	10.89	10.87	81.55	1.71	299.88	280.03	258.28	21.75	12.874		
5,000.00	4,997.71	4,998.81	4,998.81	11.12	11.10	82.76	1.71	299.88	279.21	257.01	22.21	12.573		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 114H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,100.00	5,097.53	5,098.63	5,098.63	11.35	11.32	83.98	1.71	299.88	278.52	255.86	22.66	12.290		
5,200.00	5,197.35	5,198.45	5,198.45	11.58	11.55	85.21	1.71	299.88	277.95	254.84	23.12	12.023		
5,300.00	5,297.17	5,298.27	5,298.27	11.81	11.77	86.44	1.71	299.88	277.52	253.94	23.57	11.772		
5,400.00	5,396.99	5,398.09	5,398.09	12.04	11.99	87.68	1.71	299.88	277.21	253.18	24.03	11.535		
5,500.00	5,496.81	5,497.91	5,497.91	12.27	12.22	88.92	1.71	299.88	277.03	252.54	24.49	11.313		
5,508.68	5,505.48	5,506.29	5,506.29	12.29	12.24	89.02	1.71	299.88	277.02	252.50	24.53	11.295 CC, ES		
5,600.00	5,596.63	5,593.54	5,593.53	12.51	12.42	90.05	1.71	300.64	277.72	252.80	24.92	11.144		
5,659.61	5,656.13	5,650.50	5,650.48	12.64	12.53	90.65	1.71	301.86	278.91	253.75	25.17	11.082		
5,700.00	5,696.46	5,689.10	5,689.07	12.73	12.61	91.02	1.71	303.00	280.05	254.73	25.32	11.059		
5,800.00	5,796.36	5,784.68	5,784.56	12.91	12.80	91.60	1.71	306.95	283.94	258.27	25.68	11.059		
5,900.00	5,896.32	5,881.35	5,881.07	13.08	12.99	91.72	1.71	312.50	289.27	263.24	26.03	11.113		
6,003.69	6,000.00	5,984.86	5,984.38	13.26	13.21	113.67	1.71	318.90	295.16	268.75	26.41	11.174		
6,100.00	6,096.31	6,080.98	6,080.33	13.45	13.40	113.21	1.71	324.85	300.63	273.83	26.80	11.219		
6,200.00	6,196.31	6,180.79	6,179.94	13.67	13.61	112.76	1.71	331.02	306.32	279.10	27.22	11.255		
6,300.00	6,296.31	6,280.60	6,279.56	13.89	13.81	112.32	1.71	337.19	312.03	284.39	27.64	11.289		
6,400.00	6,396.31	6,380.41	6,379.18	14.12	14.02	111.89	1.71	343.36	317.76	289.70	28.06	11.323		
6,500.00	6,496.31	6,480.22	6,478.80	14.34	14.23	111.48	1.71	349.53	323.51	295.02	28.49	11.356		
6,600.00	6,596.31	6,580.03	6,578.41	14.56	14.44	111.09	1.71	355.70	329.27	300.36	28.91	11.388		
6,700.00	6,696.31	6,679.84	6,678.03	14.78	14.65	110.71	1.71	361.87	335.05	305.71	29.34	11.420		
6,800.00	6,796.31	6,779.65	6,777.65	15.00	14.87	110.34	1.71	368.05	340.84	311.08	29.77	11.451		
6,900.00	6,896.31	6,879.45	6,877.27	15.23	15.08	109.99	1.71	374.22	346.65	316.45	30.19	11.481		
7,000.00	6,996.31	6,979.26	6,976.88	15.45	15.29	109.64	1.71	380.39	352.47	321.84	30.62	11.510		
7,100.00	7,096.31	7,079.07	7,076.50	15.67	15.51	109.31	1.71	386.56	358.30	327.25	31.05	11.539		
7,200.00	7,196.31	7,178.88	7,176.12	15.89	15.72	108.99	1.71	392.73	364.14	332.66	31.48	11.567		
7,300.00	7,296.31	7,278.69	7,275.74	16.12	15.94	108.68	1.71	398.90	369.99	338.08	31.91	11.594		
7,400.00	7,396.31	7,378.50	7,375.36	16.34	16.16	108.38	1.71	405.07	375.86	343.51	32.34	11.621		
7,500.00	7,496.31	7,478.31	7,474.97	16.56	16.38	108.08	1.71	411.24	381.73	348.96	32.77	11.647		
7,600.00	7,596.31	7,578.11	7,574.59	16.78	16.60	107.80	1.71	417.42	387.61	354.41	33.21	11.673		
7,700.00	7,696.31	7,677.92	7,674.21	17.01	16.82	107.53	1.71	423.59	393.51	359.87	33.64	11.698		
7,800.00	7,796.31	7,777.73	7,773.83	17.23	17.04	107.26	1.71	429.76	399.41	365.34	34.07	11.723		
7,900.00	7,896.31	7,877.54	7,873.44	17.45	17.26	107.00	1.71	435.93	405.32	370.81	34.51	11.747		
8,000.00	7,996.31	7,977.35	7,973.06	17.68	17.48	106.75	1.71	442.10	411.23	376.30	34.94	11.770		
8,100.00	8,096.31	8,077.16	8,072.68	17.90	17.70	106.50	1.71	448.27	417.16	381.79	35.37	11.793		
8,200.00	8,196.31	8,176.97	8,172.30	18.12	17.93	106.26	1.71	454.44	423.09	387.28	35.81	11.815		
8,300.00	8,296.31	8,276.78	8,271.91	18.34	18.15	106.03	1.71	460.61	429.03	392.79	36.24	11.837		
8,400.00	8,396.31	8,376.58	8,371.53	18.57	18.37	105.81	1.71	466.79	434.98	398.30	36.68	11.859		
8,500.00	8,496.31	8,476.39	8,471.15	18.79	18.60	105.59	1.71	472.96	440.93	403.82	37.12	11.880		
8,600.00	8,596.31	8,581.74	8,576.32	19.01	18.83	105.38	1.71	479.00	446.47	408.90	37.57	11.882		
8,700.00	8,696.31	8,689.82	8,684.32	19.24	19.04	105.24	1.71	483.28	450.29	412.26	38.03	11.842		
8,800.00	8,796.31	8,798.02	8,792.50	19.46	19.25	105.16	1.71	485.52	452.29	413.82	38.46	11.759		
8,900.00	8,896.31	8,902.94	8,897.41	19.68	19.45	105.15	1.71	485.88	452.61	413.72	38.89	11.638		
9,000.00	8,996.31	9,002.94	8,997.41	19.91	19.67	105.15	1.71	485.88	452.61	413.28	39.33	11.507		
9,100.00	9,096.31	9,102.94	9,097.41	20.13	19.89	105.15	1.71	485.88	452.61	412.83	39.78	11.379		
9,104.24	9,100.56	9,107.19	9,101.66	20.14	19.89	105.15	1.71	485.88	452.61	412.81	39.80	11.373		
9,200.00	9,196.31	9,195.84	9,190.30	20.35	20.08	105.27	0.74	485.89	452.93	412.73	40.20	11.267		
9,300.00	9,296.31	9,276.85	9,270.56	20.58	20.23	106.53	-9.65	485.96	456.58	416.06	40.53	11.267		
9,400.00	9,396.31	9,350.00	9,341.15	20.80	20.37	108.78	-28.67	486.10	465.11	424.40	40.71	11.424		
9,500.00	9,496.31	9,423.69	9,409.21	21.03	20.51	112.01	-56.76	486.31	479.86	439.08	40.78	11.768		
9,600.00	9,596.31	9,486.38	9,463.89	21.25	20.63	115.36	-87.37	486.53	502.26	461.72	40.54	12.388		
9,700.00	9,696.31	9,550.00	9,515.62	21.47	20.76	119.17	-124.35	486.80	533.32	493.16	40.16	13.279		
9,800.00	9,796.31	9,589.38	9,545.46	21.70	20.85	121.65	-150.03	486.99	572.92	533.70	39.22	14.609		
9,900.00	9,896.31	9,630.91	9,574.94	21.92	20.95	124.33	-179.27	487.21	620.94	582.70	38.25	16.236		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 114H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
10,000.00	9,996.31	9,666.89	9,598.72	22.14	21.04	126.66	-206.26	487.40	676.46	639.27	37.19	18.187		
10,030.73	10,027.04	9,676.96	9,605.06	22.21	21.07	127.31	-214.08	487.46	694.87	658.00	36.87	18.846		
10,050.00	10,046.31	9,683.18	9,608.92	22.25	21.09	-50.74	-218.97	487.50	706.56	669.90	36.66	19.272		
10,100.00	10,096.15	9,700.00	9,619.06	22.33	21.13	-47.00	-232.38	487.59	736.37	700.25	36.12	20.387		
10,150.00	10,145.45	9,716.79	9,628.79	22.41	21.19	-43.70	-246.06	487.69	765.21	729.64	35.57	21.510		
10,200.00	10,193.86	9,734.29	9,638.50	22.48	21.24	-40.78	-260.62	487.80	792.86	757.82	35.04	22.627		
10,250.00	10,241.00	9,750.00	9,646.84	22.56	21.30	-38.29	-273.94	487.90	819.12	784.64	34.47	23.760		
10,300.00	10,286.51	9,770.40	9,657.11	22.63	21.37	-36.01	-291.56	488.03	843.79	809.78	34.01	24.811		
10,350.00	10,330.05	9,800.00	9,670.89	22.70	21.48	-33.86	-317.76	488.22	866.92	833.20	33.72	25.708		
10,400.00	10,371.27	9,800.00	9,670.89	22.77	21.48	-32.59	-317.76	488.22	887.96	855.02	32.94	26.960		
10,450.00	10,409.88	9,826.61	9,682.10	22.83	21.59	-31.06	-341.88	488.40	907.06	874.42	32.64	27.793		
10,500.00	10,445.58	9,850.00	9,691.02	22.89	21.69	-29.83	-363.50	488.56	924.21	891.90	32.31	28.609		
10,550.00	10,478.09	9,865.04	9,696.29	22.96	21.76	-28.90	-377.59	488.66	939.19	907.30	31.89	29.453		
10,600.00	10,507.17	9,884.46	9,702.54	23.05	21.85	-28.10	-395.97	488.79	952.00	920.42	31.58	30.145		
10,650.00	10,532.59	9,900.00	9,707.10	23.17	21.93	-27.49	-410.83	488.90	962.59	931.31	31.28	30.777		
10,700.00	10,554.17	9,923.58	9,713.23	23.31	22.05	-26.98	-433.59	489.07	970.85	939.72	31.13	31.187		
10,750.00	10,571.73	9,950.00	9,718.98	23.47	22.19	-26.62	-459.38	489.26	976.86	945.80	31.06	31.446		
10,800.00	10,585.15	9,950.00	9,718.98	23.65	22.19	-26.45	-459.38	489.26	980.63	949.81	30.82	31.819		
10,850.00	10,594.32	9,982.66	9,724.44	23.86	22.38	-26.37	-491.57	489.49	981.66	950.72	30.94	31.728		
10,900.00	10,599.17	10,000.00	9,726.59	24.08	22.48	-26.43	-508.78	489.62	980.54	949.54	31.01	31.625		
10,929.52	10,600.00	10,000.00	9,726.59	24.22	22.48	-26.50	-508.78	489.62	979.02	947.99	31.03	31.552		
11,000.00	10,600.15	10,050.00	9,729.87	24.60	22.78	-26.58	-558.65	489.98	975.17	943.76	31.41	31.042		
11,100.00	10,600.36	10,114.72	9,730.28	25.21	23.22	-26.59	-623.37	490.46	974.20	942.19	32.01	30.438		
11,200.00	10,600.57	10,214.72	9,730.77	25.90	23.96	-26.59	-723.36	491.19	973.94	941.13	32.81	29.685		
11,300.00	10,600.78	10,314.72	9,731.27	26.69	24.79	-26.60	-823.36	491.92	973.68	939.97	33.71	28.885		
11,400.00	10,600.99	10,414.72	9,731.77	27.54	25.69	-26.61	-923.35	492.66	973.42	938.73	34.70	28.055		
11,500.00	10,601.20	10,514.72	9,732.27	28.47	26.67	-26.62	-1,023.35	493.39	973.16	937.40	35.77	27.208		
11,600.00	10,601.41	10,614.71	9,732.77	29.46	27.71	-26.62	-1,123.35	494.12	972.91	935.99	36.91	26.357		
11,700.00	10,601.62	10,714.71	9,733.27	30.50	28.80	-26.63	-1,223.34	494.85	972.65	934.52	38.13	25.511		
11,800.00	10,601.83	10,814.71	9,733.77	31.59	29.95	-26.64	-1,323.34	495.59	972.39	932.99	39.40	24.679		
11,900.00	10,602.04	10,914.71	9,734.27	32.73	31.14	-26.65	-1,423.33	496.32	972.13	931.40	40.73	23.866		
12,000.00	10,602.25	11,014.71	9,734.77	33.91	32.36	-26.65	-1,523.33	497.05	971.87	929.76	42.11	23.077		
12,100.00	10,602.46	11,114.71	9,735.27	35.13	33.63	-26.66	-1,623.32	497.78	971.61	928.07	43.54	22.315		
12,200.00	10,602.67	11,214.71	9,735.77	36.38	34.92	-26.67	-1,723.32	498.52	971.35	926.34	45.01	21.580		
12,300.00	10,602.88	11,314.71	9,736.27	37.66	36.24	-26.68	-1,823.32	499.25	971.09	924.58	46.52	20.876		
12,400.00	10,603.09	11,414.71	9,736.77	38.97	37.59	-26.68	-1,923.31	499.98	970.84	922.78	48.06	20.201		
12,500.00	10,603.30	11,514.71	9,737.27	40.30	38.96	-26.69	-2,023.31	500.71	970.58	920.95	49.63	19.555		
12,600.00	10,603.51	11,614.71	9,737.76	41.66	40.35	-26.70	-2,123.30	501.45	970.32	919.09	51.23	18.939		
12,700.00	10,603.72	11,714.71	9,738.26	43.03	41.76	-26.71	-2,223.30	502.18	970.06	917.20	52.86	18.352		
12,800.00	10,603.93	11,814.71	9,738.76	44.42	43.18	-26.71	-2,323.29	502.91	969.80	915.29	54.51	17.791		
12,900.00	10,604.14	11,914.71	9,739.26	45.83	44.62	-26.72	-2,423.29	503.64	969.54	913.36	56.18	17.257		
13,000.00	10,604.35	12,014.71	9,739.76	47.25	46.07	-26.73	-2,523.28	504.38	969.29	911.41	57.87	16.748		
13,100.00	10,604.56	12,114.71	9,740.26	48.69	47.54	-26.74	-2,623.28	505.11	969.03	909.44	59.58	16.263		
13,200.00	10,604.76	12,214.71	9,740.76	50.14	49.01	-26.75	-2,723.28	505.84	968.77	907.46	61.31	15.801		
13,300.00	10,604.99	12,314.71	9,741.26	51.60	50.50	-26.75	-2,823.27	506.57	968.51	905.46	63.05	15.361		
13,400.00	10,605.20	12,414.71	9,741.76	53.07	51.99	-26.76	-2,923.27	507.31	968.25	903.44	64.81	14.941		
13,500.00	10,605.41	12,514.71	9,742.26	54.55	53.50	-26.77	-3,023.26	508.04	967.99	901.42	66.58	14.540		
13,600.00	10,605.62	12,614.71	9,742.76	56.04	55.01	-26.78	-3,123.26	508.77	967.73	899.38	68.36	14.157		
13,700.00	10,605.83	12,714.71	9,743.26	57.53	56.52	-26.78	-3,223.25	509.50	967.48	897.33	70.15	13.792		
13,800.00	10,606.04	12,814.71	9,743.76	59.04	58.05	-26.79	-3,323.25	510.23	967.22	895.27	71.95	13.443		
13,900.00	10,606.25	12,914.71	9,744.26	60.55	59.58	-26.80	-3,423.25	510.97	966.96	893.20	73.76	13.109		
14,000.00	10,606.46	13,014.70	9,744.75	62.07	61.12	-26.81	-3,523.24	511.70	966.70	891.12	75.58	12.790		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 114H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)			
14,100.00	10,606.67	13,114.70	9,745.25	63.59	62.66	-26.81	-3,623.24	512.43	966.44	889.03	77.41	12.484		
14,200.00	10,606.88	13,214.70	9,745.75	65.12	64.20	-26.82	-3,723.23	513.16	966.18	886.93	79.25	12.191		
14,300.00	10,607.09	13,314.70	9,746.25	66.66	65.76	-26.83	-3,823.23	513.90	965.93	884.83	81.10	11.911		
14,400.00	10,607.30	13,414.70	9,746.75	68.20	67.31	-26.84	-3,923.22	514.63	965.67	882.72	82.95	11.642		
14,500.00	10,607.51	13,514.70	9,747.25	69.74	68.87	-26.84	-4,023.22	515.36	965.41	880.60	84.81	11.384		
14,600.00	10,607.72	13,614.70	9,747.75	71.29	70.43	-26.85	-4,123.22	516.09	965.15	878.48	86.67	11.136		
14,700.00	10,607.93	13,714.70	9,748.25	72.84	72.00	-26.86	-4,223.21	516.83	964.89	876.35	88.54	10.898		
14,800.00	10,608.14	13,814.70	9,748.75	74.40	73.57	-26.87	-4,323.21	517.56	964.64	874.22	90.42	10.669		
14,900.00	10,608.35	13,914.70	9,749.25	75.96	75.14	-26.88	-4,423.20	518.29	964.38	872.08	92.30	10.449		
15,000.00	10,608.56	14,014.70	9,749.75	77.52	76.71	-26.88	-4,523.20	519.02	964.12	869.94	94.18	10.237		
15,100.00	10,608.77	14,114.70	9,750.25	79.09	78.29	-26.89	-4,623.19	519.76	963.86	867.79	96.07	10.033		
15,200.00	10,608.98	14,214.70	9,750.75	80.66	79.87	-26.90	-4,723.19	520.49	963.60	865.64	97.97	9.836		
15,300.00	10,609.19	14,314.70	9,751.25	82.23	81.45	-26.91	-4,823.18	521.22	963.35	863.48	99.87	9.646		
15,400.00	10,609.41	14,414.70	9,751.74	83.80	83.04	-26.91	-4,923.18	521.95	963.09	861.32	101.77	9.464		
15,500.00	10,609.62	14,514.70	9,752.24	85.38	84.63	-26.92	-5,023.18	522.69	962.83	859.15	103.67	9.287		
15,600.00	10,609.83	14,614.70	9,752.74	86.96	86.21	-26.93	-5,123.17	523.42	962.57	856.99	105.58	9.117		
15,700.00	10,610.04	14,714.70	9,753.24	88.54	87.80	-26.94	-5,223.17	524.15	962.31	854.81	107.50	8.952		
15,800.00	10,610.25	14,814.70	9,753.74	90.12	89.40	-26.95	-5,323.16	524.88	962.06	852.64	109.42	8.793		
15,900.00	10,610.46	14,914.70	9,754.24	91.71	90.99	-26.95	-5,423.16	525.62	961.80	850.46	111.33	8.639		
16,000.00	10,610.67	15,014.70	9,754.74	93.29	92.59	-26.96	-5,523.15	526.35	961.54	848.28	113.26	8.490		
16,100.00	10,610.88	15,114.70	9,755.24	94.88	94.18	-26.97	-5,623.15	527.08	961.28	846.10	115.18	8.346		
16,200.00	10,611.09	15,214.70	9,755.74	96.47	95.78	-26.98	-5,723.15	527.81	961.02	843.91	117.11	8.206		
16,300.00	10,611.30	15,314.70	9,756.24	98.07	97.38	-26.98	-5,823.14	528.55	960.77	841.72	119.04	8.071		
16,400.00	10,611.51	15,414.69	9,756.74	99.66	98.98	-26.99	-5,923.14	529.28	960.51	839.53	120.98	7.940		
16,500.00	10,611.72	15,514.69	9,757.24	101.25	100.58	-27.00	-6,023.13	530.01	960.25	837.34	122.91	7.812		
16,600.00	10,611.93	15,614.69	9,757.74	102.85	102.19	-27.01	-6,123.13	530.74	959.99	835.14	124.85	7.689		
16,700.00	10,612.14	15,714.69	9,758.24	104.45	103.79	-27.01	-6,223.12	531.48	959.73	832.94	126.79	7.569		
16,800.00	10,612.35	15,814.69	9,758.73	106.05	105.40	-27.02	-6,323.12	532.21	959.48	830.74	128.73	7.453		
16,900.00	10,612.56	15,914.69	9,759.23	107.65	107.00	-27.03	-6,423.12	532.94	959.22	828.54	130.68	7.340		
17,000.00	10,612.77	16,014.69	9,759.73	109.25	108.61	-27.04	-6,523.11	533.67	958.96	826.33	132.63	7.231		
17,100.00	10,612.98	16,114.69	9,760.23	110.85	110.22	-27.05	-6,623.11	534.41	958.70	824.13	134.58	7.124		
17,200.00	10,613.19	16,214.69	9,760.73	112.46	111.83	-27.05	-6,723.10	535.14	958.45	821.92	136.53	7.020		
17,300.00	10,613.40	16,314.69	9,761.23	114.06	113.44	-27.06	-6,823.10	535.87	958.19	819.71	138.48	6.919		
17,400.00	10,613.61	16,414.69	9,761.73	115.67	115.05	-27.07	-6,923.09	536.60	957.93	817.50	140.43	6.821		
17,500.00	10,613.83	16,514.69	9,762.23	117.27	116.66	-27.08	-7,023.09	537.34	957.67	815.28	142.39	6.726		
17,600.00	10,614.04	16,614.69	9,762.73	118.88	118.28	-27.09	-7,123.08	538.07	957.41	813.07	144.35	6.633		
17,700.00	10,614.25	16,714.69	9,763.23	120.49	119.89	-27.09	-7,223.08	538.80	957.16	810.85	146.31	6.542		
17,800.00	10,614.46	16,814.69	9,763.73	122.10	121.50	-27.10	-7,323.08	539.53	956.90	808.63	148.27	6.454		
17,900.00	10,614.67	16,914.69	9,764.23	123.71	123.12	-27.11	-7,423.07	540.27	956.64	806.41	150.23	6.368		
18,000.00	10,614.88	17,014.69	9,764.73	125.32	124.73	-27.12	-7,523.07	541.00	956.38	804.19	152.20	6.284		
18,058.48	10,615.00	17,069.55	9,765.00	126.23	125.62	-27.12	-7,577.93	541.40	956.24	802.94	153.30	6.238		
18,058.37	10,615.00	17,069.55	9,765.00	126.26	125.62	-27.12	-7,577.93	541.40	956.24	802.92	153.32	6.237 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 125H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program:		0-LEAM MWD+HDGM											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.80	0.80	0.00	0.00	-90.34	-0.18	-30.02	30.02					
100.00	100.00	100.80	100.80	0.09	0.09	-90.34	-0.18	-30.02	30.02	29.85	0.17	172.786		
200.00	200.00	200.80	200.80	0.31	0.31	-90.34	-0.18	-30.02	30.02	29.40	0.62	48.166		
300.00	300.00	300.80	300.80	0.54	0.54	-90.34	-0.18	-30.02	30.02	28.95	1.07	27.983		
400.00	400.00	400.80	400.80	0.76	0.76	-90.34	-0.18	-30.02	30.02	28.50	1.52	19.720		
500.00	500.00	500.80	500.80	0.99	0.99	-90.34	-0.18	-30.02	30.02	28.05	1.97	15.224		
600.00	600.00	600.80	600.80	1.21	1.21	-90.34	-0.18	-30.02	30.02	27.60	2.42	12.398		
700.00	700.00	700.80	700.80	1.43	1.44	-90.34	-0.18	-30.02	30.02	27.15	2.87	10.457		
800.00	800.00	800.80	800.80	1.66	1.66	-90.34	-0.18	-30.02	30.02	26.70	3.32	9.041		
900.00	900.00	900.80	900.80	1.88	1.89	-90.34	-0.18	-30.02	30.02	26.25	3.77	7.963		
1,000.00	1,000.00	1,000.80	1,000.80	2.11	2.11	-90.34	-0.18	-30.02	30.02	25.80	4.22	7.115		
1,100.00	1,100.00	1,100.80	1,100.80	2.33	2.34	-90.34	-0.18	-30.02	30.02	25.35	4.67	6.430		
1,200.00	1,200.00	1,200.80	1,200.80	2.56	2.56	-90.34	-0.18	-30.02	30.02	24.90	5.12	5.865		
1,300.00	1,300.00	1,300.80	1,300.80	2.78	2.78	-90.34	-0.18	-30.02	30.02	24.45	5.57	5.391		
1,400.00	1,400.00	1,400.80	1,400.80	3.01	3.01	-90.34	-0.18	-30.02	30.02	24.00	6.02	4.989		
1,500.00	1,500.00	1,500.80	1,500.80	3.23	3.23	-90.34	-0.18	-30.02	30.02	23.55	6.47	4.642		
1,600.00	1,600.00	1,600.80	1,600.80	3.46	3.46	-90.34	-0.18	-30.02	30.02	23.10	6.92	4.340		
1,700.00	1,700.00	1,700.80	1,700.80	3.68	3.68	-90.34	-0.18	-30.02	30.02	22.65	7.37	4.075		
1,800.00	1,800.00	1,800.80	1,800.80	3.91	3.91	-90.34	-0.18	-30.02	30.02	22.20	7.82	3.841		
1,900.00	1,900.00	1,900.80	1,900.80	4.13	4.13	-90.34	-0.18	-30.02	30.02	21.76	8.27	3.632		
2,000.00	2,000.00	2,000.80	2,000.80	4.36	4.36	-90.34	-0.18	-30.02	30.02	21.31	8.71	3.445		
2,100.00	2,100.00	2,100.80	2,100.80	4.58	4.58	-90.34	-0.18	-30.02	30.02	20.86	9.16	3.276		
2,200.00	2,200.00	2,200.80	2,200.80	4.81	4.81	-90.34	-0.18	-30.02	30.02	20.41	9.61	3.123		
2,300.00	2,300.00	2,300.80	2,300.80	5.03	5.03	-90.34	-0.18	-30.02	30.02	19.96	10.06	2.983		
2,400.00	2,400.00	2,400.80	2,400.80	5.26	5.26	-90.34	-0.18	-30.02	30.02	19.51	10.51	2.856		
2,500.00	2,500.00	2,500.80	2,500.80	5.48	5.48	-90.34	-0.18	-30.02	30.02	19.06	10.96	2.738		
2,600.00	2,600.00	2,600.80	2,600.80	5.71	5.71	-90.34	-0.18	-30.02	30.02	18.61	11.41	2.631		
2,700.00	2,700.00	2,700.80	2,700.80	5.93	5.93	-90.34	-0.18	-30.02	30.02	18.16	11.86	2.531		
2,800.00	2,800.00	2,800.80	2,800.80	6.15	6.16	-90.34	-0.18	-30.02	30.02	17.71	12.31	2.438		
2,900.00	2,900.00	2,900.80	2,900.80	6.38	6.38	-90.34	-0.18	-30.02	30.02	17.26	12.76	2.353		
3,000.00	3,000.00	3,000.80	3,000.80	6.60	6.61	-90.34	-0.18	-30.02	30.02	16.81	13.21	2.273		
3,100.00	3,100.00	3,100.80	3,100.80	6.83	6.83	-90.34	-0.18	-30.02	30.02	16.36	13.66	2.198		
3,200.00	3,200.00	3,200.80	3,200.80	7.05	7.06	-90.34	-0.18	-30.02	30.02	15.91	14.11	2.128		
3,300.00	3,300.00	3,300.80	3,300.80	7.28	7.28	-90.34	-0.18	-30.02	30.02	15.46	14.56	2.062		
3,400.00	3,400.00	3,400.80	3,400.80	7.50	7.51	-90.34	-0.18	-30.02	30.02	15.01	15.01	2.000		
3,500.00	3,500.00	3,500.80	3,500.80	7.73	7.73	-90.34	-0.18	-30.02	30.02	14.56	15.46	1.942 CC		
3,600.00	3,600.00	3,600.80	3,600.80	7.95	7.95	-114.07	-0.18	-30.02	30.37	14.46	15.91	1.909 ES, SF		
3,700.00	3,699.96	3,700.76	3,700.76	8.17	8.18	-118.41	-0.18	-30.02	31.52	15.17	16.35	1.928		
3,800.00	3,799.86	3,800.66	3,800.66	8.40	8.40	-124.90	-0.18	-30.02	33.82	17.02	16.80	2.013		
3,844.08	3,843.87	3,844.67	3,844.67	8.50	8.50	-128.18	-0.18	-30.02	35.30	18.30	16.99	2.077		
3,900.00	3,899.69	3,900.49	3,900.49	8.62	8.63	-132.22	-0.18	-30.02	37.47	20.22	17.24	2.173		
4,000.00	3,999.51	4,000.31	4,000.31	8.85	8.85	-138.33	-0.18	-30.02	41.74	24.05	17.69	2.359		
4,100.00	4,099.33	4,100.00	4,100.00	9.07	9.07	-142.18	0.52	-30.55	46.50	28.36	18.14	2.564		
4,200.00	4,199.15	4,199.81	4,199.77	9.29	9.29	-143.38	2.60	-32.12	51.58	33.00	18.58	2.777		
4,300.00	4,298.97	4,299.56	4,299.42	9.52	9.51	-142.63	6.06	-34.75	56.86	37.84	19.02	2.990		
4,400.00	4,398.79	4,399.24	4,398.92	9.75	9.73	-140.41	10.90	-38.42	62.39	42.93	19.46	3.206		
4,500.00	4,498.61	4,498.79	4,498.16	9.97	9.96	-137.14	17.11	-43.13	68.34	48.44	19.90	3.434		
4,600.00	4,598.43	4,598.46	4,597.43	10.20	10.18	-133.62	24.15	-48.47	74.76	54.41	20.35	3.674		
4,700.00	4,698.25	4,698.15	4,696.74	10.43	10.40	-130.66	31.20	-53.81	81.41	60.62	20.79	3.915		
4,800.00	4,798.07	4,797.85	4,796.04	10.66	10.63	-128.16	38.24	-59.16	88.25	67.01	21.24	4.155		
4,900.00	4,897.89	4,897.55	4,895.35	10.89	10.86	-126.01	45.29	-64.50	95.23	73.54	21.69	4.390		
5,000.00	4,997.71	4,997.25	4,994.65	11.12	11.09	-124.16	52.34	-69.85	102.33	80.18	22.14	4.621		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 125H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,100.00	5,097.53	5,096.94	5,093.95	11.35	11.32	-122.56	59.39	-75.19	109.52	86.92	22.60	4.846		
5,200.00	5,197.35	5,196.64	5,193.26	11.58	11.56	-121.15	66.44	-80.54	116.78	93.73	23.05	5.066		
5,300.00	5,297.17	5,296.34	5,292.56	11.81	11.79	-119.90	73.49	-85.88	124.11	100.60	23.51	5.279		
5,400.00	5,396.99	5,396.03	5,391.87	12.04	12.02	-118.80	80.54	-91.23	131.48	107.52	23.97	5.486		
5,500.00	5,496.81	5,495.73	5,491.17	12.27	12.26	-117.81	87.59	-96.58	138.91	114.48	24.43	5.686		
5,600.00	5,596.63	5,595.43	5,590.47	12.51	12.50	-116.93	94.63	-101.92	146.36	121.47	24.89	5.881		
5,659.61	5,656.13	5,654.86	5,649.67	12.64	12.64	-116.44	98.84	-105.11	150.82	125.66	25.16	5.994		
5,700.00	5,696.46	5,695.13	5,689.78	12.73	12.74	-116.10	101.68	-107.27	153.79	128.45	25.34	6.069		
5,800.00	5,796.36	5,796.40	5,790.73	12.91	12.93	-115.17	108.16	-112.18	160.16	134.45	25.71	6.229		
5,900.00	5,896.32	5,897.89	5,892.02	13.08	13.12	-114.24	113.22	-116.01	164.85	138.76	26.08	6.320		
6,003.69	6,000.00	6,003.28	5,997.30	13.26	13.31	-91.04	116.96	-118.85	167.92	141.46	26.46	6.346		
6,100.00	6,096.31	6,101.27	6,095.26	13.45	13.48	-90.32	119.06	-120.44	169.45	142.63	26.83	6.316		
6,200.00	6,196.31	6,203.09	6,197.06	13.67	13.66	-90.06	119.82	-121.02	170.02	142.79	27.23	6.243		
6,300.00	6,296.31	6,303.14	6,297.11	13.89	13.86	-90.06	119.82	-121.02	170.02	142.37	27.65	6.148		
6,400.00	6,396.31	6,403.14	6,397.11	14.12	14.08	-90.06	119.82	-121.02	170.02	141.92	28.10	6.051		
6,500.00	6,496.31	6,503.14	6,497.11	14.34	14.30	-90.06	119.82	-121.02	170.02	141.48	28.54	5.957		
6,600.00	6,596.31	6,603.14	6,597.11	14.56	14.52	-90.06	119.82	-121.02	170.02	141.04	28.98	5.866		
6,700.00	6,696.31	6,703.14	6,697.11	14.78	14.75	-90.06	119.82	-121.02	170.02	140.59	29.43	5.778		
6,800.00	6,796.31	6,803.14	6,797.11	15.00	14.97	-90.06	119.82	-121.02	170.02	140.15	29.87	5.692		
6,900.00	6,896.31	6,903.14	6,897.11	15.23	15.19	-90.06	119.82	-121.02	170.02	139.70	30.32	5.608		
7,000.00	6,996.31	7,003.14	6,997.11	15.45	15.41	-90.06	119.82	-121.02	170.02	139.26	30.76	5.527		
7,100.00	7,096.31	7,103.14	7,097.11	15.67	15.63	-90.06	119.82	-121.02	170.02	138.81	31.21	5.448		
7,200.00	7,196.31	7,203.14	7,197.11	15.89	15.85	-90.06	119.82	-121.02	170.02	138.37	31.65	5.372		
7,300.00	7,296.31	7,303.14	7,297.11	16.12	16.07	-90.06	119.82	-121.02	170.02	137.92	32.10	5.297		
7,400.00	7,396.31	7,403.14	7,397.11	16.34	16.30	-90.06	119.82	-121.02	170.02	137.48	32.54	5.225		
7,500.00	7,496.31	7,503.14	7,497.11	16.56	16.52	-90.06	119.82	-121.02	170.02	137.03	32.99	5.154		
7,600.00	7,596.31	7,603.14	7,597.11	16.78	16.74	-90.06	119.82	-121.02	170.02	136.59	33.43	5.086		
7,700.00	7,696.31	7,703.14	7,697.11	17.01	16.96	-90.06	119.82	-121.02	170.02	136.14	33.88	5.019		
7,800.00	7,796.31	7,803.14	7,797.11	17.23	17.18	-90.06	119.82	-121.02	170.02	135.70	34.32	4.954		
7,900.00	7,896.31	7,903.14	7,897.11	17.45	17.41	-90.06	119.82	-121.02	170.02	135.25	34.77	4.890		
8,000.00	7,996.31	8,003.14	7,997.11	17.68	17.63	-90.06	119.82	-121.02	170.02	134.81	35.21	4.828		
8,100.00	8,096.31	8,103.14	8,097.11	17.90	17.85	-90.06	119.82	-121.02	170.02	134.36	35.66	4.768		
8,200.00	8,196.31	8,203.14	8,197.11	18.12	18.07	-90.06	119.82	-121.02	170.02	133.91	36.11	4.709		
8,300.00	8,296.31	8,303.14	8,297.11	18.34	18.30	-90.06	119.82	-121.02	170.02	133.47	36.55	4.652		
8,400.00	8,396.31	8,403.14	8,397.11	18.57	18.52	-90.06	119.82	-121.02	170.02	133.02	37.00	4.595		
8,500.00	8,496.31	8,503.14	8,497.11	18.79	18.74	-90.06	119.82	-121.02	170.02	132.58	37.44	4.541		
8,600.00	8,596.31	8,603.14	8,597.11	19.01	18.96	-90.06	119.82	-121.02	170.02	132.13	37.89	4.487		
8,700.00	8,696.31	8,703.14	8,697.11	19.24	19.19	-90.06	119.82	-121.02	170.02	131.68	38.34	4.435		
8,800.00	8,796.31	8,803.14	8,797.11	19.46	19.41	-90.06	119.82	-121.02	170.02	131.24	38.78	4.384		
8,900.00	8,896.31	8,903.14	8,897.11	19.68	19.63	-90.06	119.82	-121.02	170.02	130.79	39.23	4.334		
9,000.00	8,996.31	9,003.14	8,997.11	19.91	19.85	-90.06	119.82	-121.02	170.02	130.34	39.68	4.285		
9,100.00	9,096.31	9,103.14	9,097.11	20.13	20.08	-90.06	119.82	-121.02	170.02	129.90	40.12	4.238		
9,200.00	9,196.31	9,203.14	9,197.11	20.35	20.30	-90.06	119.82	-121.02	170.02	129.45	40.57	4.191		
9,300.00	9,296.31	9,303.14	9,297.11	20.58	20.52	-90.06	119.82	-121.02	170.02	129.00	41.02	4.145		
9,400.00	9,396.31	9,403.14	9,397.11	20.80	20.75	-90.06	119.82	-121.02	170.02	128.56	41.46	4.101		
9,500.00	9,496.31	9,503.14	9,497.11	21.03	20.97	-90.06	119.82	-121.02	170.02	128.11	41.91	4.057		
9,560.91	9,557.22	9,564.07	9,558.02	21.16	21.09	-90.42	118.75	-121.01	170.02	127.85	42.17	4.032		
9,600.00	9,596.31	9,602.87	9,596.64	21.25	21.15	-91.66	115.07	-120.99	170.06	127.74	42.32	4.019		
9,700.00	9,696.31	9,698.36	9,689.88	21.47	21.30	-98.38	94.99	-120.84	171.82	129.17	42.65	4.028		
9,800.00	9,796.31	9,785.12	9,770.66	21.70	21.42	-108.41	63.55	-120.61	180.70	138.02	42.68	4.234		
9,900.00	9,896.31	9,860.96	9,836.68	21.92	21.52	-118.94	26.36	-120.33	202.72	160.81	41.91	4.838		
10,000.00	9,996.31	9,925.64	9,888.70	22.14	21.60	-127.99	-12.02	-120.05	240.34	200.03	40.31	5.963		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 125H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		+N/-S (usft)	+E/-W (usft)						
10,030.73	10,027.04	9,943.41	9,902.21	22.21	21.62	-130.36	-23.58	-119.97	254.85	215.13	39.72	6.416		
10,050.00	10,046.31	9,950.00	9,907.12	22.25	21.63	48.39	-27.96	-119.93	264.45	225.32	39.13	6.759		
10,100.00	10,096.15	9,982.18	9,930.38	22.33	21.67	42.79	-50.19	-119.77	289.48	251.12	38.35	7.548		
10,150.00	10,145.45	10,009.90	9,949.39	22.41	21.70	38.52	-70.36	-119.62	314.48	277.11	37.38	8.414		
10,200.00	10,193.86	10,037.43	9,967.28	22.48	21.73	34.94	-91.28	-119.47	338.98	302.56	36.42	9.307		
10,250.00	10,241.00	10,064.80	9,984.06	22.56	21.77	31.94	-112.91	-119.31	362.66	327.16	35.49	10.217		
10,300.00	10,286.51	10,100.00	10,004.08	22.63	21.84	29.12	-141.85	-119.10	385.39	350.45	34.94	11.029		
10,350.00	10,330.05	10,119.16	10,014.21	22.70	21.89	27.34	-158.11	-118.98	406.61	372.87	33.75	12.049		
10,400.00	10,371.27	10,150.00	10,029.38	22.77	21.96	25.48	-184.96	-118.78	426.60	393.52	33.08	12.897		
10,450.00	10,409.88	10,173.11	10,039.78	22.83	22.03	24.10	-205.60	-118.63	445.02	412.85	32.18	13.831		
10,500.00	10,445.58	10,200.00	10,050.82	22.89	22.11	22.87	-230.11	-118.45	461.87	430.40	31.48	14.674		
10,550.00	10,478.09	10,226.77	10,060.66	22.96	22.20	21.84	-255.00	-118.27	477.05	446.20	30.85	15.465		
10,600.00	10,507.17	10,250.00	10,068.25	23.05	22.28	21.02	-276.95	-118.11	490.50	460.30	30.20	16.239		
10,650.00	10,532.59	10,280.22	10,076.78	23.17	22.40	20.28	-305.94	-117.89	502.13	472.30	29.83	16.833		
10,700.00	10,554.17	10,300.00	10,081.53	23.31	22.47	19.77	-325.14	-117.75	512.02	482.68	29.34	17.453		
10,750.00	10,571.73	10,333.52	10,088.06	23.47	22.62	19.29	-358.01	-117.51	519.88	490.68	29.20	17.806		
10,800.00	10,585.15	10,350.00	10,090.56	23.65	22.69	19.00	-374.30	-117.39	526.10	497.17	28.94	18.181		
10,850.00	10,594.32	10,386.72	10,094.44	23.86	22.87	18.75	-410.81	-117.12	530.05	501.05	29.00	18.275		
10,900.00	10,599.17	10,413.31	10,095.79	24.08	23.00	18.63	-437.36	-116.93	532.26	503.17	29.08	18.301		
10,929.52	10,600.00	10,432.12	10,096.04	24.22	23.09	18.61	-456.17	-116.79	532.63	503.44	29.19	18.246		
11,000.00	10,600.15	10,502.60	10,096.48	24.60	23.49	18.62	-526.65	-116.27	532.35	502.79	29.55	18.012		
11,100.00	10,600.36	10,602.60	10,097.11	25.21	24.13	18.64	-626.64	-115.54	531.95	501.80	30.15	17.645		
11,200.00	10,600.57	10,702.60	10,097.75	25.90	24.87	18.65	-726.63	-114.80	531.55	500.72	30.83	17.242		
11,300.00	10,600.78	10,802.60	10,098.38	26.69	25.68	18.67	-826.63	-114.07	531.15	499.56	31.59	16.813		
11,400.00	10,600.99	10,902.60	10,099.01	27.54	26.58	18.68	-926.62	-113.34	530.75	498.32	32.43	16.366		
11,500.00	10,601.20	11,002.60	10,099.64	28.47	27.54	18.70	-1,026.62	-112.60	530.36	497.02	33.34	15.907		
11,600.00	10,601.41	11,102.60	10,100.27	29.46	28.56	18.71	-1,126.61	-111.87	529.96	495.64	34.32	15.444		
11,700.00	10,601.62	11,202.60	10,100.90	30.50	29.64	18.73	-1,226.61	-111.13	529.56	494.21	35.35	14.981		
11,800.00	10,601.83	11,302.59	10,101.53	31.59	30.77	18.74	-1,326.60	-110.40	529.16	492.72	36.44	14.522		
11,900.00	10,602.04	11,402.59	10,102.16	32.73	31.94	18.75	-1,426.60	-109.66	528.76	491.18	37.58	14.071		
12,000.00	10,602.25	11,502.59	10,102.79	33.91	33.16	18.77	-1,526.59	-108.93	528.36	489.60	38.76	13.631		
12,100.00	10,602.46	11,602.59	10,103.42	35.13	34.40	18.78	-1,626.58	-108.20	527.97	487.98	39.99	13.203		
12,200.00	10,602.67	11,702.59	10,104.06	36.38	35.68	18.80	-1,726.58	-107.46	527.57	486.31	41.25	12.788		
12,300.00	10,602.88	11,802.59	10,104.69	37.66	36.99	18.81	-1,826.57	-106.73	527.17	484.61	42.55	12.388		
12,400.00	10,603.09	11,902.59	10,105.32	38.97	38.33	18.83	-1,926.57	-105.99	526.77	482.88	43.89	12.003		
12,500.00	10,603.30	12,002.59	10,105.95	40.30	39.68	18.84	-2,026.56	-105.26	526.37	481.12	45.25	11.633		
12,600.00	10,603.51	12,102.59	10,106.58	41.66	41.06	18.86	-2,126.56	-104.52	525.97	479.34	46.64	11.278		
12,700.00	10,603.72	12,202.59	10,107.21	43.03	42.45	18.87	-2,226.55	-103.79	525.58	477.53	48.05	10.939		
12,800.00	10,603.93	12,302.59	10,107.84	44.42	43.87	18.89	-2,326.55	-103.06	525.18	475.69	49.48	10.613		
12,900.00	10,604.14	12,402.58	10,108.47	45.83	45.29	18.90	-2,426.54	-102.32	524.78	473.84	50.94	10.302		
13,000.00	10,604.35	12,502.58	10,109.10	47.25	46.74	18.92	-2,526.53	-101.59	524.38	471.97	52.41	10.005		
13,100.00	10,604.56	12,602.58	10,109.73	48.69	48.19	18.93	-2,626.53	-100.85	523.98	470.08	53.90	9.721		
13,200.00	10,604.78	12,702.58	10,110.37	50.14	49.66	18.95	-2,726.52	-100.12	523.59	468.17	55.41	9.449		
13,300.00	10,604.99	12,802.58	10,111.00	51.60	51.13	18.96	-2,826.52	-99.38	523.19	466.25	56.94	9.189		
13,400.00	10,605.20	12,902.58	10,111.63	53.07	52.62	18.98	-2,926.51	-98.65	522.79	464.32	58.47	8.941		
13,500.00	10,605.41	13,002.58	10,112.26	54.55	54.11	18.99	-3,026.51	-97.92	522.39	462.37	60.02	8.703		
13,600.00	10,605.62	13,102.58	10,112.89	56.04	55.61	19.01	-3,126.50	-97.18	521.99	460.41	61.59	8.476		
13,700.00	10,605.83	13,202.58	10,113.52	57.53	57.12	19.02	-3,226.50	-96.45	521.60	458.44	63.16	8.258		
13,800.00	10,606.04	13,302.58	10,114.15	59.04	58.64	19.04	-3,326.49	-95.71	521.20	456.46	64.74	8.050		
13,900.00	10,606.25	13,402.58	10,114.78	60.55	60.17	19.05	-3,426.48	-94.98	520.80	454.46	66.34	7.851		
14,000.00	10,606.46	13,502.57	10,115.41	62.07	61.70	19.07	-3,526.48	-94.25	520.40	452.46	67.94	7.660		
14,100.00	10,606.67	13,602.57	10,116.04	63.59	63.23	19.08	-3,626.47	-93.51	520.00	450.45	69.55	7.477		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 125H - OH - Plan #2												Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,200.00	10,606.88	13,702.57	10,116.68	65.12	64.77	19.10	-3,726.47	-92.78	519.61	448.44	71.17	7.301	
14,300.00	10,607.09	13,802.57	10,117.31	66.66	66.31	19.11	-3,826.46	-92.04	519.21	446.41	72.80	7.132	
14,400.00	10,607.30	13,902.57	10,117.94	68.20	67.86	19.13	-3,926.46	-91.31	518.81	444.38	74.43	6.970	
14,500.00	10,607.51	14,002.57	10,118.57	69.74	69.42	19.14	-4,026.45	-90.57	518.41	442.34	76.07	6.815	
14,600.00	10,607.72	14,102.57	10,119.20	71.29	70.97	19.16	-4,126.45	-89.84	518.02	440.30	77.72	6.665	
14,700.00	10,607.93	14,202.57	10,119.83	72.84	72.54	19.17	-4,226.44	-89.11	517.62	438.25	79.37	6.521	
14,800.00	10,608.14	14,302.57	10,120.46	74.40	74.10	19.19	-4,326.43	-88.37	517.22	436.19	81.03	6.383	
14,900.00	10,608.35	14,402.57	10,121.09	75.96	75.67	19.20	-4,426.43	-87.64	516.82	434.13	82.69	6.250	
15,000.00	10,608.56	14,502.57	10,121.72	77.52	77.24	19.22	-4,526.42	-86.90	516.43	432.06	84.36	6.121	
15,100.00	10,608.77	14,602.57	10,122.35	79.09	78.81	19.23	-4,626.42	-86.17	516.03	429.99	86.04	5.998	
15,200.00	10,608.98	14,702.56	10,122.98	80.66	80.39	19.25	-4,726.41	-85.43	515.63	427.92	87.72	5.878	
15,300.00	10,609.19	14,802.56	10,123.62	82.23	81.96	19.26	-4,826.41	-84.70	515.24	425.83	89.40	5.763	
15,400.00	10,609.41	14,902.56	10,124.25	83.80	83.55	19.28	-4,926.40	-83.97	514.84	423.75	91.09	5.652	
15,500.00	10,609.62	15,002.56	10,124.88	85.38	85.13	19.29	-5,026.39	-83.23	514.44	421.66	92.78	5.545	
15,600.00	10,609.83	15,102.56	10,125.51	86.96	86.71	19.31	-5,126.39	-82.50	514.04	419.57	94.48	5.441	
15,700.00	10,610.04	15,202.56	10,126.14	88.54	88.30	19.33	-5,226.38	-81.76	513.65	417.47	96.18	5.341	
15,800.00	10,610.25	15,302.56	10,126.77	90.12	89.89	19.34	-5,326.38	-81.03	513.25	415.37	97.88	5.244	
15,900.00	10,610.46	15,402.56	10,127.40	91.71	91.48	19.36	-5,426.37	-80.29	512.85	413.27	99.59	5.150	
16,000.00	10,610.67	15,502.56	10,128.03	93.29	93.07	19.37	-5,526.37	-79.56	512.46	411.16	101.30	5.059	
16,100.00	10,610.88	15,602.56	10,128.66	94.88	94.67	19.39	-5,626.36	-78.83	512.06	409.05	103.01	4.971	
16,200.00	10,611.09	15,702.56	10,129.29	96.47	96.26	19.40	-5,726.36	-78.09	511.66	406.93	104.73	4.886	
16,300.00	10,611.30	15,802.55	10,129.93	98.07	97.86	19.42	-5,826.35	-77.36	511.27	404.82	106.45	4.803	
16,400.00	10,611.51	15,902.55	10,130.56	99.66	99.46	19.43	-5,926.34	-76.62	510.87	402.70	108.17	4.723	
16,500.00	10,611.72	16,002.55	10,131.19	101.25	101.05	19.45	-6,026.34	-75.89	510.47	400.58	109.90	4.645	
16,600.00	10,611.93	16,102.55	10,131.82	102.85	102.66	19.47	-6,126.33	-75.15	510.07	398.45	111.62	4.570	
16,700.00	10,612.14	16,202.55	10,132.45	104.45	104.26	19.48	-6,226.33	-74.42	509.68	396.32	113.35	4.496	
16,800.00	10,612.35	16,302.55	10,133.08	106.05	105.86	19.50	-6,326.32	-73.69	509.28	394.19	115.09	4.425	
16,900.00	10,612.56	16,402.55	10,133.71	107.65	107.46	19.51	-6,426.32	-72.95	508.88	392.06	116.82	4.356	
17,000.00	10,612.77	16,502.55	10,134.34	109.25	109.07	19.53	-6,526.31	-72.22	508.49	389.93	118.56	4.289	
17,100.00	10,612.98	16,602.55	10,134.97	110.85	110.68	19.54	-6,626.31	-71.48	508.09	387.79	120.30	4.223	
17,200.00	10,613.19	16,702.55	10,135.60	112.46	112.28	19.56	-6,726.30	-70.75	507.70	385.65	122.05	4.160	
17,300.00	10,613.40	16,802.55	10,136.24	114.06	113.89	19.58	-6,826.29	-70.01	507.30	383.51	123.79	4.098	
17,400.00	10,613.61	16,902.54	10,136.87	115.67	115.50	19.59	-6,926.29	-69.28	506.90	381.36	125.54	4.038	
17,500.00	10,613.83	17,002.54	10,137.50	117.27	117.11	19.61	-7,026.28	-68.55	506.51	379.22	127.29	3.979	
17,600.00	10,614.04	17,102.54	10,138.13	118.88	118.72	19.62	-7,126.28	-67.81	506.11	377.07	129.04	3.922	
17,700.00	10,614.25	17,202.54	10,138.76	120.49	120.33	19.64	-7,226.27	-67.08	505.71	374.92	130.79	3.866	
17,800.00	10,614.46	17,302.54	10,139.39	122.10	121.94	19.65	-7,326.27	-66.34	505.32	372.77	132.55	3.812	
17,900.00	10,614.67	17,402.54	10,140.02	123.71	123.56	19.67	-7,426.26	-65.61	504.92	370.61	134.31	3.759	
18,000.00	10,614.88	17,502.54	10,140.65	125.32	125.17	19.69	-7,526.26	-64.87	504.52	368.46	136.07	3.708	
18,057.35	10,615.00	17,557.62	10,141.00	126.24	126.06	19.70	-7,581.33	-64.47	504.30	367.23	137.07	3.679	
18,058.37	10,615.00	17,557.62	10,141.00	126.26	126.06	19.70	-7,581.33	-64.47	504.30	367.21	137.09	3.679	

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 133H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 10500-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis	Distance											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	1.10	1.10	0.00	0.00	89.67	1.88	329.88	329.89					
100.00	100.00	101.10	101.10	0.09	0.09	89.67	1.88	329.88	329.89	329.71	0.17	1,891.342		
200.00	200.00	201.10	201.10	0.31	0.31	89.67	1.88	329.88	329.89	329.26	0.62	528.704		
300.00	300.00	301.10	301.10	0.54	0.54	89.67	1.88	329.88	329.89	328.81	1.07	307.304		
400.00	400.00	401.10	401.10	0.76	0.76	89.67	1.88	329.88	329.89	328.36	1.52	216.600		
500.00	500.00	501.10	501.10	0.99	0.99	89.67	1.88	329.88	329.89	327.91	1.97	167.238		
600.00	600.00	601.10	601.10	1.21	1.21	89.67	1.88	329.88	329.89	327.46	2.42	136.199		
700.00	700.00	701.10	701.10	1.43	1.44	89.67	1.88	329.88	329.89	327.01	2.87	114.878		
800.00	800.00	801.10	801.10	1.66	1.66	89.67	1.88	329.88	329.89	326.56	3.32	99.329		
900.00	900.00	901.10	901.10	1.88	1.89	89.67	1.88	329.88	329.89	326.11	3.77	87.487		
1,000.00	1,000.00	1,001.10	1,001.10	2.11	2.11	89.67	1.88	329.88	329.89	325.67	4.22	78.168		
1,100.00	1,100.00	1,101.10	1,101.10	2.33	2.34	89.67	1.88	329.88	329.89	325.22	4.67	70.643		
1,200.00	1,200.00	1,201.10	1,201.10	2.56	2.56	89.67	1.88	329.88	329.89	324.77	5.12	64.440		
1,300.00	1,300.00	1,301.10	1,301.10	2.78	2.79	89.67	1.88	329.88	329.89	324.32	5.57	59.238		
1,400.00	1,400.00	1,401.10	1,401.10	3.01	3.01	89.67	1.88	329.88	329.89	323.87	6.02	54.813		
1,500.00	1,500.00	1,501.10	1,501.10	3.23	3.24	89.67	1.88	329.88	329.89	323.42	6.47	51.004		
1,600.00	1,600.00	1,601.10	1,601.10	3.46	3.46	89.67	1.88	329.88	329.89	322.97	6.92	47.689		
1,700.00	1,700.00	1,701.10	1,701.10	3.68	3.68	89.67	1.88	329.88	329.89	322.52	7.37	44.779		
1,800.00	1,800.00	1,801.10	1,801.10	3.91	3.91	89.67	1.88	329.88	329.89	322.07	7.82	42.204		
1,900.00	1,900.00	1,901.10	1,901.10	4.13	4.13	89.67	1.88	329.88	329.89	321.62	8.27	39.909		
2,000.00	2,000.00	2,001.10	2,001.10	4.36	4.36	89.67	1.88	329.88	329.89	321.17	8.72	37.850		
2,100.00	2,100.00	2,101.10	2,101.10	4.58	4.58	89.67	1.88	329.88	329.89	320.72	9.17	35.994		
2,200.00	2,200.00	2,201.10	2,201.10	4.81	4.81	89.67	1.88	329.88	329.89	320.27	9.61	34.311		
2,300.00	2,300.00	2,301.10	2,301.10	5.03	5.03	89.67	1.88	329.88	329.89	319.82	10.06	32.778		
2,400.00	2,400.00	2,401.10	2,401.10	5.26	5.26	89.67	1.88	329.88	329.89	319.37	10.51	31.377		
2,500.00	2,500.00	2,501.10	2,501.10	5.48	5.48	89.67	1.88	329.88	329.89	318.92	10.96	30.090		
2,600.00	2,600.00	2,601.10	2,601.10	5.71	5.71	89.67	1.88	329.88	329.89	318.47	11.41	28.905		
2,700.00	2,700.00	2,701.10	2,701.10	5.93	5.93	89.67	1.88	329.88	329.89	318.02	11.86	27.810		
2,800.00	2,800.00	2,801.10	2,801.10	6.15	6.16	89.67	1.88	329.88	329.89	317.57	12.31	26.794		
2,900.00	2,900.00	2,901.10	2,901.10	6.38	6.38	89.67	1.88	329.88	329.89	317.12	12.76	25.850		
3,000.00	3,000.00	3,001.10	3,001.10	6.60	6.61	89.67	1.88	329.88	329.89	316.67	13.21	24.971		
3,100.00	3,100.00	3,101.10	3,101.10	6.83	6.83	89.67	1.88	329.88	329.89	316.22	13.66	24.149		
3,200.00	3,200.00	3,201.10	3,201.10	7.05	7.06	89.67	1.88	329.88	329.89	315.78	14.11	23.380		
3,300.00	3,300.00	3,301.10	3,301.10	7.28	7.28	89.67	1.88	329.88	329.89	315.33	14.56	22.658		
3,400.00	3,400.00	3,401.10	3,401.10	7.50	7.51	89.67	1.88	329.88	329.89	314.88	15.01	21.979		
3,500.00	3,500.00	3,501.10	3,501.10	7.73	7.73	89.67	1.88	329.88	329.89	314.43	15.46	21.340		
3,600.00	3,600.00	3,601.10	3,601.10	7.95	7.96	67.60	1.88	329.88	329.55	313.65	15.91	20.718		
3,700.00	3,699.96	3,701.06	3,701.06	8.17	8.18	68.04	1.88	329.88	328.56	312.21	16.35	20.092		
3,800.00	3,799.86	3,800.96	3,800.96	8.40	8.40	68.76	1.88	329.88	326.96	310.16	16.80	19.463		
3,844.08	3,843.87	3,844.97	3,844.97	8.50	8.50	69.17	1.88	329.88	326.07	309.07	17.00	19.186		
3,900.00	3,899.69	3,900.79	3,900.79	8.62	8.63	69.72	1.88	329.88	324.89	307.64	17.24	18.840		
4,000.00	3,999.51	4,000.00	4,000.00	8.85	8.85	70.72	1.88	329.88	322.85	305.16	17.69	18.251		
4,100.00	4,099.33	4,099.11	4,099.11	9.07	9.05	71.67	1.88	330.67	321.75	303.64	18.11	17.765		
4,113.33	4,112.64	4,107.71	4,107.71	9.10	9.08	71.79	1.88	330.89	321.73	303.57	18.17	17.711 CC, ES		
4,200.00	4,199.15	4,189.66	4,189.62	9.29	9.24	72.60	1.88	333.02	322.39	303.87	18.51	17.412		
4,300.00	4,298.97	4,284.17	4,284.05	9.52	9.43	73.50	1.88	336.93	324.76	305.84	18.91	17.169		
4,400.00	4,398.79	4,378.60	4,378.33	9.75	9.62	74.35	1.88	342.38	328.85	309.54	19.31	17.029		
4,500.00	4,498.61	4,476.46	4,475.93	9.97	9.82	75.18	1.88	349.31	334.30	314.58	19.73	16.947		
4,600.00	4,598.43	4,576.18	4,575.40	10.20	10.03	76.00	1.88	356.47	339.93	319.77	20.15	16.866		
4,700.00	4,698.25	4,675.91	4,674.87	10.43	10.24	76.79	1.88	363.62	345.62	325.04	20.58	16.790		
4,800.00	4,798.07	4,775.63	4,774.34	10.66	10.45	77.56	1.88	370.78	351.38	330.36	21.02	16.719		
4,900.00	4,897.89	4,875.36	4,873.81	10.89	10.66	78.30	1.88	377.93	357.19	335.74	21.45	16.653		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 133H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 10500-MWD+IFR1+MS												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
5,000.00	4,997.71	4,975.08	4,973.28	11.12	10.88	79.02	1.88	385.09	363.07	341.18	21.88	16.590	
5,100.00	5,097.53	5,074.81	5,072.74	11.35	11.09	79.72	1.88	392.24	369.00	346.68	22.32	16.531	
5,200.00	5,197.35	5,174.53	5,172.21	11.58	11.31	80.39	1.88	399.40	374.98	352.22	22.76	16.475	
5,300.00	5,297.17	5,274.26	5,271.68	11.81	11.53	81.04	1.88	406.55	381.01	357.81	23.20	16.423	
5,400.00	5,396.99	5,373.98	5,371.15	12.04	11.75	81.67	1.88	413.71	387.09	363.45	23.64	16.374	
5,500.00	5,496.81	5,473.71	5,470.62	12.27	11.97	82.29	1.88	420.86	393.22	369.13	24.08	16.327	
5,600.00	5,596.63	5,573.43	5,570.08	12.51	12.19	82.88	1.88	428.02	399.39	374.86	24.53	16.284	
5,659.61	5,656.13	5,632.88	5,629.38	12.64	12.33	83.23	1.88	432.28	403.08	378.29	24.79	16.259	
5,700.00	5,696.46	5,673.16	5,669.56	12.73	12.42	83.46	1.88	435.18	405.61	380.65	24.96	16.250	
5,800.00	5,796.36	5,772.93	5,769.06	12.91	12.64	83.87	1.88	442.33	412.03	386.68	25.35	16.252	
5,900.00	5,896.32	5,872.70	5,868.58	13.08	12.87	84.02	1.88	449.49	418.64	392.90	25.74	16.264	
6,003.69	6,000.00	5,976.14	5,971.76	13.26	13.10	106.15	1.88	456.91	425.68	399.54	26.14	16.284	
6,100.00	6,096.31	6,072.21	6,067.57	13.45	13.32	105.89	1.88	463.81	432.33	405.79	26.54	16.292	
6,200.00	6,196.31	6,171.95	6,167.06	13.67	13.55	105.64	1.88	470.96	439.23	412.26	26.97	16.285	
6,300.00	6,296.31	6,271.69	6,266.54	13.89	13.78	105.39	1.88	478.12	446.15	418.74	27.41	16.279	
6,400.00	6,396.31	6,371.44	6,366.03	14.12	14.01	105.15	1.88	485.28	453.07	425.23	27.84	16.272	
6,500.00	6,496.31	6,471.18	6,465.52	14.34	14.24	104.92	1.88	492.43	460.00	431.72	28.28	16.266	
6,600.00	6,596.31	6,570.92	6,565.00	14.56	14.47	104.69	1.88	499.59	466.94	438.22	28.72	16.260	
6,700.00	6,696.31	6,670.66	6,664.49	14.78	14.70	104.47	1.88	506.75	473.89	444.73	29.16	16.254	
6,800.00	6,796.31	6,770.40	6,763.97	15.00	14.94	104.26	1.88	513.90	480.84	451.24	29.59	16.248	
6,900.00	6,896.31	6,870.15	6,863.46	15.23	15.17	104.05	1.88	521.06	487.80	457.76	30.03	16.242	
7,000.00	6,996.31	6,969.89	6,962.94	15.45	15.40	103.85	1.88	528.22	494.76	464.29	30.47	16.236	
7,100.00	7,096.31	7,069.63	7,062.43	15.67	15.64	103.65	1.88	535.37	501.73	470.82	30.91	16.231	
7,200.00	7,196.31	7,169.37	7,161.91	15.89	15.87	103.46	1.88	542.53	508.71	477.35	31.35	16.225	
7,300.00	7,296.31	7,269.12	7,261.40	16.12	16.11	103.27	1.88	549.69	515.69	483.90	31.79	16.220	
7,400.00	7,396.31	7,368.86	7,360.88	16.34	16.35	103.09	1.88	556.84	522.68	490.44	32.23	16.215	
7,500.00	7,496.31	7,468.60	7,460.37	16.56	16.58	102.92	1.88	564.00	529.67	496.99	32.68	16.210	
7,600.00	7,596.31	7,568.34	7,559.85	16.78	16.82	102.75	1.88	571.15	536.66	503.55	33.12	16.205	
7,700.00	7,696.31	7,668.08	7,659.34	17.01	17.06	102.58	1.88	578.31	543.67	510.11	33.56	16.200	
7,800.00	7,796.31	7,767.83	7,758.82	17.23	17.29	102.42	1.88	585.47	550.67	516.67	34.00	16.195	
7,900.00	7,896.31	7,867.57	7,858.31	17.45	17.53	102.26	1.88	592.62	557.68	523.24	34.44	16.191	
8,000.00	7,996.31	7,967.31	7,957.79	17.68	17.77	102.10	1.88	599.78	564.70	529.81	34.89	16.186	
8,100.00	8,096.31	8,067.05	8,057.28	17.90	18.01	101.95	1.88	606.94	571.71	536.38	35.33	16.182	
8,200.00	8,196.31	8,166.80	8,156.76	18.12	18.25	101.81	1.88	614.09	578.74	542.96	35.77	16.177	
8,300.00	8,296.31	8,266.54	8,256.25	18.34	18.49	101.66	1.88	621.25	585.76	549.54	36.22	16.173	
8,400.00	8,396.31	8,366.28	8,355.73	18.57	18.73	101.52	1.88	628.41	592.79	556.13	36.66	16.169	
8,500.00	8,496.31	8,466.02	8,455.22	18.79	18.97	101.39	1.88	635.56	599.82	562.72	37.11	16.165	
8,600.00	8,596.31	8,565.77	8,554.70	19.01	19.21	101.25	1.88	642.72	606.86	569.31	37.55	16.161	
8,700.00	8,696.31	8,665.51	8,654.19	19.24	19.45	101.12	1.88	649.88	613.90	575.90	38.00	16.157	
8,800.00	8,796.31	8,765.25	8,753.67	19.46	19.69	100.99	1.88	657.03	620.94	582.50	38.44	16.153	
8,900.00	8,896.31	8,864.99	8,853.16	19.68	19.93	100.87	1.88	664.19	627.99	589.10	38.89	16.149	
9,000.00	8,996.31	8,975.34	8,963.28	19.91	20.16	100.75	1.88	671.28	634.31	594.96	39.35	16.119	
9,100.00	9,096.31	9,087.48	9,075.31	20.13	20.38	100.66	1.88	678.33	638.73	598.93	39.80	16.047	
9,200.00	9,196.31	9,199.78	9,187.57	20.35	20.59	100.62	1.88	679.18	641.23	600.99	40.24	15.934	
9,300.00	9,296.31	9,309.63	9,297.41	20.58	20.79	100.60	1.88	679.88	641.84	601.17	40.67	15.780	
9,400.00	9,396.31	9,409.63	9,397.41	20.80	21.00	100.60	1.88	679.88	641.84	600.73	41.11	15.612	
9,500.00	9,496.31	9,509.63	9,497.41	21.03	21.21	100.60	1.88	679.88	641.84	600.29	41.55	15.447	
9,508.17	9,504.49	9,517.81	9,505.59	21.04	21.23	100.60	1.88	679.88	641.84	600.26	41.59	15.434	
9,600.00	9,596.31	9,606.04	9,593.82	21.25	21.41	100.63	1.64	679.88	641.90	599.92	41.98	15.291	
9,700.00	9,696.31	9,687.43	9,674.74	21.47	21.56	101.34	-6.50	679.94	643.90	601.55	42.35	15.205	
9,800.00	9,796.31	9,785.04	9,750.08	21.70	21.71	102.93	-24.86	680.08	649.22	606.55	42.66	15.218	
9,900.00	9,896.31	9,836.54	9,816.72	21.92	21.84	105.13	-50.64	680.26	658.88	616.00	42.88	15.366	

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 133H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 10500-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
10,000.00	9,996.31	9,900.00	9,872.78	22.14	21.97	107.60	-80.31	680.48	674.11	631.17	42.94	15.699		
10,030.73	10,027.04	9,918.88	9,888.79	22.21	22.01	108.42	-90.32	680.55	680.08	637.16	42.93	15.843		
10,050.00	10,046.31	9,930.04	9,898.09	22.25	22.03	-70.29	-96.48	680.60	684.06	641.16	42.90	15.945		
10,100.00	10,096.15	9,958.81	9,921.51	22.33	22.09	-68.11	-113.19	680.72	694.52	651.74	42.79	16.232		
10,150.00	10,145.45	9,987.38	9,943.90	22.41	22.15	-66.05	-130.92	680.85	705.05	662.42	42.63	16.538		
10,200.00	10,193.86	10,015.76	9,965.24	22.48	22.22	-64.13	-149.63	680.99	715.46	673.02	42.44	16.857		
10,250.00	10,241.00	10,050.00	9,989.72	22.56	22.30	-62.18	-173.56	681.16	725.61	683.31	42.29	17.156		
10,300.00	10,286.51	10,072.07	10,004.73	22.63	22.36	-60.74	-189.75	681.28	735.22	693.23	41.99	17.510		
10,350.00	10,330.05	10,100.00	10,022.80	22.70	22.43	-59.28	-211.04	681.44	744.29	702.55	41.74	17.831		
10,400.00	10,371.27	10,127.92	10,039.81	22.77	22.51	-57.98	-233.17	681.60	752.65	711.15	41.50	18.135		
10,450.00	10,409.88	10,150.00	10,052.48	22.83	22.58	-56.94	-251.25	681.73	760.23	719.03	41.20	18.452		
10,500.00	10,445.58	10,183.43	10,070.32	22.89	22.69	-55.88	-279.52	681.94	766.83	725.76	41.07	18.671		
10,550.00	10,478.09	10,211.09	10,083.82	22.96	22.78	-55.07	-303.66	682.12	772.49	731.59	40.90	18.885		
10,600.00	10,507.17	10,238.71	10,096.11	23.05	22.89	-54.43	-328.38	682.30	777.11	736.33	40.78	19.054		
10,650.00	10,532.59	10,266.29	10,107.19	23.17	23.00	-53.94	-353.64	682.48	780.64	739.92	40.72	19.170		
10,700.00	10,554.17	10,300.00	10,119.06	23.31	23.14	-53.59	-385.18	682.71	783.08	742.30	40.79	19.200		
10,750.00	10,571.73	10,321.39	10,125.62	23.47	23.24	-53.45	-405.54	682.86	784.28	743.48	40.81	19.220		
10,800.00	10,585.15	10,350.00	10,133.20	23.65	23.38	-53.44	-433.13	683.06	784.37	743.39	40.97	19.144		
10,850.00	10,594.32	10,376.46	10,138.97	23.86	23.51	-53.59	-458.95	683.25	783.28	742.07	41.21	19.006		
10,900.00	10,599.17	10,400.00	10,143.10	24.08	23.64	-53.87	-482.12	683.42	781.06	739.54	41.52	18.811		
10,929.52	10,600.00	10,420.30	10,145.90	24.22	23.75	-54.14	-502.22	683.57	779.19	737.40	41.79	18.646		
11,000.00	10,600.15	10,450.00	10,148.70	24.60	23.92	-54.31	-531.79	683.79	775.81	733.43	42.38	18.307		
11,044.02	10,600.24	10,484.02	10,150.02	24.86	24.13	-54.38	-565.78	684.04	774.98	732.14	42.84	18.092		
11,100.00	10,600.36	10,530.04	10,149.57	25.21	25.05	-54.35	-611.79	684.37	775.32	731.99	43.33	17.895		
11,200.00	10,600.57	10,630.03	10,148.29	25.90	28.69	-54.26	-711.77	685.10	776.19	732.10	44.09	17.605		
11,300.00	10,600.78	10,730.02	10,147.00	26.69	28.78	-54.17	-811.74	685.84	777.06	732.31	44.76	17.362		
11,400.00	10,600.99	10,830.01	10,145.71	27.54	28.86	-54.08	-911.72	686.57	777.94	732.43	45.51	17.094		
11,500.00	10,601.20	10,929.99	10,144.43	28.47	28.95	-53.99	-1,011.70	687.30	778.82	732.47	46.35	16.803		
11,600.00	10,601.41	11,029.98	10,143.14	29.46	29.04	-53.90	-1,111.68	688.03	779.70	732.43	47.27	16.496		
11,700.00	10,601.62	11,129.97	10,141.86	30.50	29.13	-53.81	-1,211.66	688.76	780.58	732.32	48.26	16.176		
11,800.00	10,601.83	11,229.96	10,140.57	31.59	29.23	-53.72	-1,311.63	689.50	781.46	732.15	49.31	15.847		
11,900.00	10,602.04	11,329.95	10,139.29	32.73	29.32	-53.64	-1,411.61	690.23	782.34	731.91	50.43	15.512		
12,000.00	10,602.25	11,429.94	10,138.00	33.91	29.42	-53.55	-1,511.59	690.96	783.23	731.62	51.61	15.175		
12,100.00	10,602.46	11,529.93	10,136.71	35.13	29.52	-53.46	-1,611.57	691.69	784.12	731.27	52.85	14.838		
12,200.00	10,602.67	11,629.92	10,135.43	36.38	29.62	-53.37	-1,711.55	692.42	785.01	730.88	54.13	14.502		
12,300.00	10,602.88	11,729.90	10,134.14	37.66	29.73	-53.28	-1,811.52	693.16	785.90	730.44	55.46	14.170		
12,400.00	10,603.09	11,829.89	10,132.86	38.97	29.83	-53.20	-1,911.50	693.89	786.80	729.96	56.84	13.844		
12,500.00	10,603.30	11,929.88	10,131.57	40.30	29.94	-53.11	-2,011.48	694.62	787.69	729.44	58.25	13.523		
12,600.00	10,603.51	12,029.87	10,130.29	41.66	30.06	-53.02	-2,111.46	695.35	788.59	728.89	59.70	13.209		
12,700.00	10,603.72	12,129.86	10,129.00	43.03	30.17	-52.94	-2,211.43	696.08	789.49	728.30	61.19	12.903		
12,800.00	10,603.93	12,229.85	10,127.71	44.42	30.30	-52.85	-2,311.41	696.81	790.39	727.69	62.71	12.605		
12,900.00	10,604.14	12,329.84	10,126.43	45.83	30.42	-52.76	-2,411.39	697.55	791.30	727.04	64.26	12.315		
13,000.00	10,604.35	12,429.83	10,125.14	47.25	30.56	-52.68	-2,511.37	698.28	792.20	726.37	65.83	12.034		
13,100.00	10,604.56	12,529.82	10,123.86	48.69	30.70	-52.59	-2,611.35	699.01	793.11	725.67	67.44	11.761		
13,200.00	10,604.78	12,629.80	10,122.57	50.14	30.85	-52.51	-2,711.32	699.74	794.02	724.95	69.06	11.471		
13,300.00	10,604.99	12,729.79	10,121.29	51.60	31.02	-52.42	-2,811.30	700.47	794.93	724.22	70.71	11.242		
13,400.00	10,605.20	12,829.78	10,120.00	53.07	31.21	-52.33	-2,911.28	701.21	795.84	723.46	72.38	10.995		
13,500.00	10,605.41	12,929.77	10,118.71	54.55	31.43	-52.25	-3,011.26	701.94	796.75	722.68	74.07	10.756		
13,600.00	10,605.62	13,029.76	10,117.43	56.04	31.68	-52.16	-3,111.24	702.67	797.67	721.89	75.78	10.526		
13,700.00	10,605.83	13,129.75	10,116.14	57.53	31.97	-52.08	-3,211.21	703.40	798.59	721.08	77.51	10.303		
13,800.00	10,606.04	13,229.74	10,114.86	59.04	32.31	-51.99	-3,311.19	704.13	799.51	720.26	79.25	10.089		
13,900.00	10,606.25	13,329.73	10,113.57	60.55	32.69	-51.91	-3,411.17	704.87	800.43	719.42	81.00	9.881		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 133H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM, 10500-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
14,000.00	10,606.46	13,429.71	10,112.29	62.07	33.11	-51.83	-3,511.15	705.60	801.35	718.58	82.77	9.681		
14,100.00	10,606.67	13,529.70	10,111.00	63.59	33.56	-51.74	-3,611.12	706.33	802.28	717.72	84.55	9.488		
14,200.00	10,606.88	13,629.69	10,109.71	65.12	34.03	-51.66	-3,711.10	707.06	803.20	716.85	86.35	9.302		
14,300.00	10,607.09	13,729.68	10,108.43	66.66	34.53	-51.57	-3,811.08	707.79	804.13	715.98	88.15	9.122		
14,400.00	10,607.30	13,829.67	10,107.14	68.20	35.04	-51.49	-3,911.06	708.52	805.06	715.09	89.97	8.948		
14,500.00	10,607.51	13,929.66	10,105.86	69.74	35.57	-51.41	-4,011.04	709.26	805.99	714.20	91.79	8.780		
14,600.00	10,607.72	14,029.65	10,104.57	71.29	36.11	-51.32	-4,111.01	709.99	806.92	713.30	93.63	8.618		
14,700.00	10,607.93	14,129.64	10,103.29	72.84	36.66	-51.24	-4,210.99	710.72	807.86	712.39	95.47	8.462		
14,800.00	10,608.14	14,229.62	10,102.00	74.40	37.23	-51.16	-4,310.97	711.45	808.79	711.48	97.32	8.311		
14,900.00	10,608.35	14,329.61	10,100.71	75.96	37.80	-51.08	-4,410.95	712.18	809.73	710.56	99.18	8.165		
15,000.00	10,608.56	14,429.60	10,099.43	77.52	38.38	-50.99	-4,510.93	712.92	810.67	709.63	101.04	8.023		
15,100.00	10,608.77	14,529.59	10,098.14	79.09	38.97	-50.91	-4,610.90	713.65	811.61	708.70	102.91	7.887		
15,200.00	10,608.98	14,629.58	10,096.86	80.66	39.56	-50.83	-4,710.88	714.38	812.56	707.77	104.79	7.754		
15,300.00	10,609.19	14,729.57	10,095.57	82.23	40.16	-50.75	-4,810.86	715.11	813.50	706.84	106.67	7.627		
15,400.00	10,609.41	14,829.56	10,094.29	83.80	40.77	-50.67	-4,910.84	715.84	814.45	705.90	108.55	7.503		
15,500.00	10,609.62	14,929.55	10,093.00	85.38	41.39	-50.58	-5,010.81	716.58	815.40	704.95	110.44	7.383		
15,600.00	10,609.83	15,029.54	10,091.71	86.96	42.01	-50.50	-5,110.79	717.31	816.35	704.01	112.34	7.267		
15,700.00	10,610.04	15,129.52	10,090.43	88.54	42.63	-50.42	-5,210.77	718.04	817.30	703.06	114.24	7.154		
15,800.00	10,610.25	15,229.51	10,089.14	90.12	43.26	-50.34	-5,310.75	718.77	818.25	702.11	116.14	7.045		
15,900.00	10,610.46	15,329.50	10,087.86	91.71	43.89	-50.26	-5,410.73	719.50	819.21	701.16	118.05	6.940		
16,000.00	10,610.67	15,429.49	10,086.57	93.29	44.53	-50.18	-5,510.70	720.23	820.16	700.21	119.96	6.837		
16,100.00	10,610.88	15,529.48	10,085.29	94.88	45.17	-50.10	-5,610.68	720.97	821.12	699.25	121.87	6.738		
16,200.00	10,611.09	15,629.47	10,084.00	96.47	45.82	-50.02	-5,710.66	721.70	822.08	698.30	123.78	6.641		
16,300.00	10,611.30	15,729.46	10,082.71	98.07	46.47	-49.94	-5,810.64	722.43	823.04	697.34	125.70	6.548		
16,400.00	10,611.51	15,829.45	10,081.43	99.66	47.12	-49.86	-5,910.62	723.16	824.00	696.38	127.62	6.457		
16,500.00	10,611.72	15,929.43	10,080.14	101.25	47.78	-49.78	-6,010.59	723.89	824.97	695.43	129.54	6.368		
16,600.00	10,611.93	16,029.42	10,078.86	102.85	48.44	-49.70	-6,110.57	724.63	825.93	694.47	131.47	6.283		
16,700.00	10,612.14	16,129.41	10,077.57	104.45	49.11	-49.62	-6,210.55	725.36	826.90	693.51	133.39	6.199		
16,800.00	10,612.35	16,229.40	10,076.29	106.05	49.77	-49.54	-6,310.53	726.09	827.87	692.55	135.32	6.118		
16,900.00	10,612.56	16,329.39	10,075.00	107.65	50.44	-49.47	-6,410.50	726.82	828.84	691.59	137.25	6.039		
17,000.00	10,612.77	16,429.38	10,073.71	109.25	51.11	-49.39	-6,510.48	727.55	829.81	690.64	139.18	5.962		
17,100.00	10,612.98	16,529.37	10,072.43	110.85	51.79	-49.31	-6,610.46	728.29	830.79	689.68	141.11	5.888		
17,200.00	10,613.19	16,629.36	10,071.14	112.46	52.47	-49.23	-6,710.44	729.02	831.76	688.72	143.04	5.815		
17,300.00	10,613.40	16,729.35	10,069.86	114.06	53.15	-49.15	-6,810.42	729.75	832.74	687.77	144.97	5.744		
17,400.00	10,613.61	16,829.33	10,068.57	115.67	53.83	-49.07	-6,910.39	730.48	833.72	686.81	146.90	5.675		
17,500.00	10,613.83	16,929.32	10,067.29	117.27	54.51	-49.00	-7,010.37	731.21	834.70	685.86	148.84	5.608		
17,600.00	10,614.04	17,029.31	10,066.00	118.88	55.20	-48.92	-7,110.35	731.95	835.68	684.90	150.77	5.543		
17,700.00	10,614.25	17,129.30	10,064.71	120.49	55.89	-48.84	-7,210.33	732.68	836.66	683.95	152.71	5.479		
17,800.00	10,614.46	17,229.29	10,063.43	122.10	56.58	-48.76	-7,310.31	733.41	837.64	683.00	154.64	5.417		
17,900.00	10,614.67	17,329.28	10,062.14	123.71	57.27	-48.69	-7,410.28	734.14	838.63	682.05	156.58	5.356		
18,000.00	10,614.88	17,429.27	10,060.86	125.32	57.97	-48.61	-7,510.26	734.87	839.62	681.10	158.52	5.297		
18,058.37	10,615.00	17,487.63	10,060.11	126.26	58.37	-48.57	-7,568.62	735.30	840.20	680.55	159.65	5.263 SF		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 142H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 9973-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	-90.31	-0.49	-90.01	90.01					
100.00	100.00	99.60	99.60	0.09	0.09	-90.31	-0.49	-90.01	90.01	89.84	0.17	524.534		
200.00	200.00	199.60	199.60	0.31	0.31	-90.31	-0.49	-90.01	90.01	89.39	0.62	145.044		
300.00	300.00	299.60	299.60	0.54	0.53	-90.31	-0.49	-90.01	90.01	88.94	1.07	84.114		
400.00	400.00	399.60	399.60	0.76	0.76	-90.31	-0.49	-90.01	90.01	88.49	1.52	59.232		
500.00	500.00	499.60	499.60	0.99	0.98	-90.31	-0.49	-90.01	90.01	88.04	1.97	45.710		
600.00	600.00	599.60	599.60	1.21	1.21	-90.31	-0.49	-90.01	90.01	87.59	2.42	37.215		
700.00	700.00	699.60	699.60	1.43	1.43	-90.31	-0.49	-90.01	90.01	87.14	2.87	31.382		
800.00	800.00	799.60	799.60	1.66	1.66	-90.31	-0.49	-90.01	90.01	86.69	3.32	27.130		
900.00	900.00	899.60	899.60	1.88	1.88	-90.31	-0.49	-90.01	90.01	86.24	3.77	23.893		
1,000.00	1,000.00	999.60	999.60	2.11	2.11	-90.31	-0.49	-90.01	90.01	85.79	4.22	21.346		
1,100.00	1,100.00	1,099.60	1,099.60	2.33	2.33	-90.31	-0.49	-90.01	90.01	85.34	4.67	19.289		
1,200.00	1,200.00	1,199.60	1,199.60	2.56	2.56	-90.31	-0.49	-90.01	90.01	84.90	5.12	17.594		
1,300.00	1,300.00	1,299.60	1,299.60	2.78	2.78	-90.31	-0.49	-90.01	90.01	84.45	5.57	16.173		
1,400.00	1,400.00	1,399.60	1,399.60	3.01	3.01	-90.31	-0.49	-90.01	90.01	84.00	6.01	14.965		
1,500.00	1,500.00	1,499.60	1,499.60	3.23	3.23	-90.31	-0.49	-90.01	90.01	83.55	6.46	13.924		
1,600.00	1,600.00	1,599.60	1,599.60	3.46	3.46	-90.31	-0.49	-90.01	90.01	83.10	6.91	13.019		
1,700.00	1,700.00	1,699.60	1,699.60	3.68	3.68	-90.31	-0.49	-90.01	90.01	82.65	7.36	12.224		
1,800.00	1,800.00	1,799.60	1,799.60	3.91	3.91	-90.31	-0.49	-90.01	90.01	82.20	7.81	11.521		
1,900.00	1,900.00	1,899.60	1,899.60	4.13	4.13	-90.31	-0.49	-90.01	90.01	81.75	8.26	10.894		
2,000.00	2,000.00	1,999.60	1,999.60	4.36	4.36	-90.31	-0.49	-90.01	90.01	81.30	8.71	10.332		
2,100.00	2,100.00	2,099.60	2,099.60	4.58	4.58	-90.31	-0.49	-90.01	90.01	80.85	9.16	9.825		
2,200.00	2,200.00	2,199.60	2,199.60	4.81	4.81	-90.31	-0.49	-90.01	90.01	80.40	9.61	9.365		
2,300.00	2,300.00	2,299.60	2,299.60	5.03	5.03	-90.31	-0.49	-90.01	90.01	79.95	10.06	8.947		
2,400.00	2,400.00	2,399.60	2,399.60	5.26	5.25	-90.31	-0.49	-90.01	90.01	79.50	10.51	8.564		
2,500.00	2,500.00	2,499.60	2,499.60	5.48	5.48	-90.31	-0.49	-90.01	90.01	79.05	10.96	8.213 CC, ES		
2,600.00	2,600.00	2,598.05	2,598.05	5.71	5.69	-90.31	-0.49	-90.85	90.86	79.47	11.39	7.977		
2,700.00	2,700.00	2,696.44	2,696.44	5.93	5.88	-90.30	-0.49	-93.38	93.43	81.63	11.80	7.915 SF		
2,800.00	2,800.00	2,794.71	2,794.58	6.15	6.08	-90.29	-0.49	-97.59	97.72	85.50	12.22	7.998		
2,900.00	2,900.00	2,892.80	2,892.50	6.38	6.28	-90.27	-0.49	-103.47	103.71	91.09	12.63	8.213		
3,000.00	3,000.00	2,992.09	2,991.52	6.60	6.49	-90.25	-0.49	-110.65	110.94	97.89	13.05	8.501		
3,100.00	3,100.00	3,091.82	3,090.99	6.83	6.70	-90.24	-0.49	-117.91	118.23	104.75	13.48	8.772		
3,200.00	3,200.00	3,191.56	3,190.46	7.05	6.92	-90.22	-0.49	-125.18	125.51	111.60	13.91	9.024		
3,300.00	3,300.00	3,291.29	3,289.93	7.28	7.14	-90.21	-0.49	-132.44	132.79	118.45	14.34	9.261		
3,400.00	3,400.00	3,391.02	3,389.40	7.50	7.36	-90.20	-0.49	-139.70	140.08	125.30	14.77	9.483		
3,500.00	3,500.00	3,490.76	3,488.87	7.73	7.58	-90.19	-0.49	-146.97	147.36	132.15	15.21	9.691		
3,600.00	3,600.00	3,590.46	3,588.31	7.95	7.80	-112.62	-0.49	-154.23	154.98	139.34	15.64	9.909		
3,700.00	3,699.96	3,690.09	3,687.67	8.17	8.03	-113.37	-0.49	-161.49	163.28	147.21	16.07	10.159		
3,800.00	3,799.86	3,789.61	3,786.92	8.40	8.25	-114.57	-0.49	-168.73	172.33	155.83	16.51	10.441		
3,844.08	3,843.87	3,833.43	3,830.63	8.50	8.35	-115.22	-0.49	-171.93	176.58	159.89	16.70	10.576		
3,900.00	3,899.69	3,889.01	3,886.06	8.62	8.48	-116.10	-0.49	-175.97	182.11	165.17	16.94	10.750		
4,000.00	3,999.51	3,988.40	3,985.19	8.85	8.71	-117.55	-0.49	-183.21	192.08	174.70	17.38	11.055		
4,100.00	4,099.33	4,087.79	4,084.31	9.07	8.94	-118.86	-0.49	-190.45	202.16	184.35	17.81	11.349		
4,200.00	4,199.15	4,187.18	4,183.44	9.29	9.17	-120.05	-0.49	-197.69	212.33	194.08	18.25	11.634		
4,300.00	4,298.97	4,286.57	4,282.57	9.52	9.41	-121.12	-0.49	-204.93	222.59	203.90	18.69	11.909		
4,400.00	4,398.79	4,385.96	4,381.69	9.75	9.64	-122.11	-0.49	-212.17	232.92	213.79	19.13	12.174		
4,500.00	4,498.61	4,485.35	4,480.82	9.97	9.88	-123.00	-0.49	-219.41	243.31	223.74	19.58	12.429		
4,600.00	4,598.43	4,584.74	4,579.94	10.20	10.11	-123.83	-0.49	-226.65	253.76	233.74	20.02	12.675		
4,700.00	4,698.25	4,684.13	4,679.07	10.43	10.35	-124.59	-0.49	-233.89	264.25	243.79	20.47	12.912		
4,800.00	4,798.07	4,783.52	4,778.19	10.66	10.58	-125.29	-0.49	-241.12	274.79	253.87	20.91	13.140		
4,900.00	4,897.89	4,882.91	4,877.32	10.89	10.82	-125.94	-0.49	-248.36	285.36	264.00	21.36	13.360		
5,000.00	4,997.71	4,982.30	4,976.44	11.12	11.06	-126.54	-0.49	-255.60	295.97	274.16	21.81	13.572		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 142H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM, 9973-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (")	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
5,100.00	5,097.53	5,081.69	5,075.57	11.35	11.30	-127.10	-0.49	-262.84	306.60	284.35	22.26	13.777		
5,200.00	5,197.35	5,181.08	5,174.69	11.58	11.54	-127.62	-0.49	-270.08	317.27	294.56	22.70	13.974		
5,300.00	5,297.17	5,280.46	5,273.82	11.81	11.78	-128.11	-0.49	-277.32	327.96	304.80	23.15	14.164		
5,400.00	5,396.99	5,379.85	5,372.94	12.04	12.02	-128.57	-0.49	-284.56	338.67	315.06	23.61	14.347		
5,500.00	5,496.81	5,479.24	5,472.07	12.27	12.26	-129.00	-0.49	-291.80	349.40	325.34	24.06	14.524		
5,600.00	5,596.63	5,578.63	5,571.20	12.51	12.50	-129.41	-0.49	-299.04	360.15	335.64	24.51	14.694		
5,659.61	5,656.13	5,637.88	5,630.28	12.64	12.65	-129.64	-0.49	-303.35	366.56	341.78	24.78	14.793		
5,700.00	5,696.46	5,678.03	5,670.33	12.73	12.75	-129.80	-0.49	-306.28	370.82	345.87	24.95	14.862		
5,800.00	5,796.36	5,777.55	5,769.58	12.91	12.99	-130.06	-0.49	-313.52	380.59	355.24	25.35	15.013		
5,900.00	5,896.32	5,877.17	5,868.94	13.08	13.23	-130.09	-0.49	-320.78	389.25	363.50	25.75	15.118		
6,003.69	6,000.00	5,980.55	5,972.05	13.26	13.48	-107.71	-0.49	-328.31	397.04	370.88	26.16	15.178		
6,100.00	6,096.31	6,076.61	6,067.85	13.45	13.72	-107.41	-0.49	-335.31	403.73	377.16	26.56	15.198		
6,200.00	6,196.31	6,176.34	6,167.32	13.67	13.96	-107.10	-0.49	-342.57	410.69	383.68	27.01	15.205		
6,300.00	6,296.31	6,276.08	6,266.79	13.89	14.21	-106.81	-0.49	-349.83	417.65	390.20	27.46	15.211		
6,400.00	6,396.31	6,375.81	6,366.26	14.12	14.45	-106.53	-0.49	-357.10	424.63	396.73	27.90	15.218		
6,500.00	6,496.31	6,475.55	6,465.73	14.34	14.70	-106.25	-0.49	-364.36	431.62	403.27	28.35	15.225		
6,600.00	6,596.31	6,575.28	6,565.20	14.56	14.95	-105.98	-0.49	-371.63	438.62	409.82	28.80	15.231		
6,700.00	6,696.31	6,675.01	6,664.67	14.78	15.19	-105.73	-0.49	-378.89	445.63	416.38	29.24	15.238		
6,800.00	6,796.31	6,774.75	6,764.14	15.00	15.44	-105.48	-0.49	-386.15	452.64	422.95	29.69	15.245		
6,900.00	6,896.31	6,874.48	6,863.60	15.23	15.69	-105.23	-0.49	-393.42	459.67	429.53	30.14	15.252		
7,000.00	6,996.31	6,974.22	6,963.07	15.45	15.93	-105.00	-0.49	-400.68	466.70	436.12	30.59	15.258		
7,100.00	7,096.31	7,073.95	7,062.54	15.67	16.18	-104.77	-0.49	-407.95	473.74	442.71	31.03	15.265		
7,200.00	7,196.31	7,173.69	7,162.01	15.89	16.43	-104.55	-0.49	-415.21	480.79	449.31	31.48	15.271		
7,300.00	7,296.31	7,273.42	7,261.48	16.12	16.67	-104.34	-0.49	-422.48	487.84	455.91	31.93	15.278		
7,400.00	7,396.31	7,373.16	7,360.95	16.34	16.92	-104.13	-0.49	-429.74	494.91	462.53	32.38	15.284		
7,500.00	7,496.31	7,472.89	7,460.42	16.56	17.17	-103.92	-0.49	-437.00	501.97	469.14	32.83	15.291		
7,600.00	7,596.31	7,572.62	7,559.89	16.78	17.42	-103.73	-0.49	-444.27	509.05	475.77	33.28	15.297		
7,700.00	7,696.31	7,672.36	7,659.36	17.01	17.66	-103.53	-0.49	-451.53	516.13	482.40	33.73	15.304		
7,800.00	7,796.31	7,772.09	7,758.83	17.23	17.91	-103.35	-0.49	-458.80	523.21	489.04	34.17	15.310		
7,900.00	7,896.31	7,871.83	7,858.30	17.45	18.16	-103.17	-0.49	-466.06	530.30	495.68	34.62	15.316		
8,000.00	7,996.31	7,971.56	7,957.77	17.68	18.41	-102.99	-0.49	-473.32	537.40	502.32	35.07	15.322		
8,100.00	8,096.31	8,071.30	8,057.24	17.90	18.66	-102.82	-0.49	-480.59	544.50	508.97	35.52	15.328		
8,200.00	8,196.31	8,171.03	8,156.71	18.12	18.91	-102.65	-0.49	-487.85	551.60	515.63	35.97	15.334		
8,300.00	8,296.31	8,270.77	8,256.18	18.34	19.16	-102.49	-0.49	-495.12	558.71	522.29	36.42	15.340		
8,400.00	8,396.31	8,370.50	8,355.65	18.57	19.40	-102.33	-0.49	-502.38	565.83	528.95	36.87	15.346		
8,500.00	8,496.31	8,472.99	8,457.87	18.79	19.65	-102.17	-0.49	-509.78	572.88	535.55	37.33	15.347		
8,600.00	8,596.31	8,583.70	8,568.39	19.01	19.87	-102.03	-0.49	-516.23	578.58	540.80	37.79	15.312		
8,700.00	8,696.31	8,684.62	8,679.22	19.24	20.07	-101.94	-0.49	-520.55	582.40	544.17	38.22	15.236		
8,800.00	8,796.31	8,805.66	8,790.24	19.46	20.27	-101.90	-0.49	-522.73	584.31	545.66	38.65	15.117		
8,900.00	8,896.31	8,911.33	8,895.91	19.68	20.47	-101.90	-0.49	-523.01	584.56	545.49	39.08	14.960		
9,000.00	8,996.31	9,011.33	8,995.91	19.91	20.67	-101.90	-0.49	-523.01	584.56	545.06	39.51	14.796		
9,007.40	9,003.71	9,018.73	9,003.31	19.92	20.68	-101.90	-0.49	-523.01	584.56	545.02	39.54	14.784		
9,100.00	9,096.31	9,100.00	9,084.55	20.13	20.84	-102.01	-1.72	-523.00	584.92	545.00	39.92	14.654		
9,200.00	9,196.31	9,184.35	9,168.01	20.35	21.00	-103.13	-13.40	-522.92	587.93	547.65	40.28	14.597		
9,300.00	9,296.31	9,261.00	9,241.64	20.58	21.14	-105.12	-34.54	-522.76	594.76	554.20	40.56	14.663		
9,400.00	9,396.31	9,330.94	9,305.81	20.80	21.27	-107.68	-62.24	-522.56	606.64	565.91	40.72	14.898		
9,500.00	9,496.31	9,400.00	9,365.40	21.03	21.41	-110.80	-97.05	-522.30	624.93	584.17	40.75	15.335		
9,600.00	9,596.31	9,450.00	9,405.71	21.25	21.52	-113.36	-126.61	-522.08	650.49	610.05	40.44	16.085		
9,700.00	9,696.31	9,500.00	9,443.29	21.47	21.63	-116.09	-159.57	-521.84	683.99	644.02	39.97	17.113		
9,800.00	9,796.31	9,536.22	9,468.64	21.70	21.72	-118.16	-185.42	-521.65	725.28	686.09	39.19	18.505		
9,900.00	9,896.31	9,571.73	9,491.86	21.92	21.81	-120.22	-212.28	-521.46	774.01	735.66	38.35	20.183		
10,000.00	9,996.31	9,600.00	9,509.14	22.14	21.89	-121.88	-234.65	-521.29	829.44	792.04	37.40	22.179		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 142H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM, 9973-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
10,030.73	10,027.04	9,600.00	9,509.14	22.21	21.89	-121.88	-234.65	-521.29	847.83	810.86	36.98	22.929		
10,050.00	10,046.31	9,616.54	9,518.72	22.25	21.94	56.36	-248.13	-521.19	859.26	822.29	36.97	23.240		
10,100.00	10,096.15	9,630.94	9,526.75	22.33	21.98	52.62	-260.08	-521.11	888.89	852.39	36.49	24.358		
10,150.00	10,145.45	9,650.00	9,536.90	22.41	22.04	49.05	-276.21	-520.99	917.70	881.62	36.08	25.434		
10,200.00	10,193.86	9,650.00	9,536.90	22.48	22.04	46.56	-276.21	-520.99	945.56	910.19	35.38	26.727		
10,250.00	10,241.00	9,677.58	9,550.64	22.56	22.14	43.44	-300.12	-520.81	971.84	936.74	35.10	27.687		
10,300.00	10,286.51	9,700.00	9,560.95	22.63	22.22	40.89	-320.04	-520.67	996.86	962.11	34.75	28.687		
10,350.00	10,330.05	9,700.00	9,560.95	22.70	22.22	39.18	-320.04	-520.67	1,020.30	986.20	34.10	29.922		
10,400.00	10,371.27	9,727.96	9,572.69	22.77	22.33	37.14	-345.40	-520.48	1,041.72	1,007.86	33.86	30.766		
10,450.00	10,409.88	9,750.00	9,581.08	22.83	22.42	35.51	-365.79	-520.33	1,061.42	1,027.87	33.56	31.631		
10,500.00	10,445.58	9,750.00	9,581.08	22.89	22.42	34.42	-365.79	-520.33	1,079.27	1,046.25	33.02	32.687		
10,550.00	10,478.09	9,780.76	9,591.45	22.96	22.55	33.15	-394.74	-520.12	1,094.64	1,061.75	32.89	33.281		
10,600.00	10,507.17	9,800.00	9,597.14	23.05	22.64	32.22	-413.12	-519.98	1,108.05	1,075.38	32.67	33.920		
10,650.00	10,532.59	9,816.82	9,601.61	23.17	22.72	31.50	-429.34	-519.86	1,119.22	1,086.75	32.47	34.471		
10,700.00	10,554.17	9,850.00	9,609.02	23.31	22.89	30.85	-461.67	-519.63	1,128.36	1,095.89	32.47	34.748		
10,750.00	10,571.73	9,850.00	9,609.02	23.47	22.89	30.53	-461.67	-519.63	1,134.66	1,102.42	32.24	35.192		
10,800.00	10,585.15	9,871.64	9,612.84	23.65	23.01	30.26	-482.96	-519.47	1,138.84	1,106.57	32.27	35.295		
10,850.00	10,594.32	9,900.00	9,616.62	23.86	23.17	30.14	-511.07	-519.26	1,140.77	1,108.38	32.39	35.217		
10,900.00	10,599.17	9,900.00	9,616.62	24.08	23.17	30.18	-511.07	-519.26	1,140.16	1,107.75	32.42	35.171		
10,929.52	10,600.00	9,919.21	9,618.39	24.22	23.28	30.27	-530.20	-519.12	1,138.62	1,106.05	32.58	34.951		
11,000.00	10,600.15	9,950.00	9,619.89	24.60	23.47	30.31	-560.94	-518.90	1,135.56	1,102.63	32.93	34.483		
11,043.75	10,600.24	9,961.28	9,620.03	24.86	23.54	30.31	-572.23	-518.81	1,135.00	1,101.83	33.17	34.221		
11,100.00	10,600.36	10,005.68	9,619.63	25.21	27.09	30.30	-616.62	-518.49	1,135.49	1,102.01	33.48	33.917		
11,200.00	10,600.57	10,105.67	9,618.63	25.90	27.16	30.27	-716.60	-517.76	1,136.53	1,102.64	33.90	33.529		
11,300.00	10,600.78	10,205.67	9,617.63	26.69	27.24	30.24	-816.59	-517.02	1,137.58	1,103.17	34.40	33.066		
11,400.00	10,600.99	10,305.66	9,616.63	27.54	27.32	30.21	-916.57	-516.29	1,138.62	1,103.63	34.99	32.539		
11,500.00	10,601.20	10,405.65	9,615.63	28.47	27.40	30.18	-1,016.56	-515.55	1,139.67	1,104.01	35.66	31.958		
11,600.00	10,601.41	10,505.64	9,614.63	29.46	27.48	30.15	-1,116.54	-514.82	1,140.71	1,104.31	36.41	31.334		
11,700.00	10,601.62	10,605.64	9,613.63	30.50	27.57	30.12	-1,216.53	-514.09	1,141.76	1,104.54	37.22	30.677		
11,800.00	10,601.83	10,705.63	9,612.63	31.59	27.66	30.09	-1,316.51	-513.35	1,142.81	1,104.71	38.10	29.996		
11,900.00	10,602.04	10,805.62	9,611.63	32.73	27.75	30.06	-1,416.50	-512.62	1,143.85	1,104.81	39.04	29.300		
12,000.00	10,602.25	10,905.61	9,610.63	33.91	27.85	30.03	-1,516.48	-511.89	1,144.90	1,104.86	40.04	28.595		
12,100.00	10,602.46	11,005.61	9,609.63	35.13	27.95	30.00	-1,616.47	-511.15	1,145.95	1,104.86	41.09	27.889		
12,200.00	10,602.67	11,105.60	9,608.63	36.38	28.05	29.97	-1,716.45	-510.42	1,146.99	1,104.80	42.19	27.186		
12,300.00	10,602.88	11,205.59	9,607.64	37.66	28.15	29.94	-1,816.44	-509.68	1,148.04	1,104.71	43.34	26.492		
12,400.00	10,603.09	11,305.58	9,606.64	38.97	28.26	29.91	-1,916.42	-508.95	1,149.09	1,104.57	44.52	25.808		
12,500.00	10,603.30	11,405.58	9,605.64	40.30	28.38	29.88	-2,016.41	-508.22	1,150.14	1,104.39	45.75	25.139		
12,600.00	10,603.51	11,505.57	9,604.64	41.66	28.50	29.85	-2,116.39	-507.48	1,151.19	1,104.17	47.02	24.485		
12,700.00	10,603.72	11,605.56	9,603.64	43.03	28.63	29.82	-2,216.38	-506.75	1,152.24	1,103.93	48.31	23.850		
12,800.00	10,603.93	11,705.56	9,602.64	44.42	28.77	29.79	-2,316.36	-506.02	1,153.29	1,103.65	49.64	23.234		
12,900.00	10,604.14	11,805.55	9,601.64	45.83	28.93	29.76	-2,416.35	-505.28	1,154.34	1,103.34	50.99	22.637		
13,000.00	10,604.35	11,905.54	9,600.64	47.25	29.09	29.73	-2,516.33	-504.55	1,155.39	1,103.01	52.37	22.060		
13,100.00	10,604.56	12,005.53	9,599.64	48.69	29.28	29.70	-2,616.32	-503.81	1,156.44	1,102.66	53.78	21.503		
13,200.00	10,604.78	12,105.53	9,598.64	50.14	29.49	29.67	-2,716.30	-503.08	1,157.49	1,102.28	55.21	20.966		
13,300.00	10,604.99	12,205.52	9,597.64	51.60	29.73	29.64	-2,816.29	-502.35	1,158.54	1,101.89	56.65	20.449		
13,400.00	10,605.20	12,305.51	9,596.65	53.07	30.01	29.61	-2,916.27	-501.61	1,159.59	1,101.47	58.12	19.951		
13,500.00	10,605.41	12,405.50	9,595.65	54.55	30.32	29.58	-3,016.26	-500.88	1,160.64	1,101.04	59.60	19.472		
13,600.00	10,605.62	12,505.50	9,594.65	56.04	30.68	29.55	-3,116.24	-500.15	1,161.70	1,100.59	61.10	19.012		
13,700.00	10,605.83	12,605.49	9,593.65	57.53	31.06	29.52	-3,216.23	-499.41	1,162.75	1,100.13	62.62	18.569		
13,800.00	10,606.04	12,705.48	9,592.65	59.04	31.48	29.49	-3,316.21	-498.68	1,163.80	1,099.65	64.15	18.143		
13,900.00	10,606.25	12,805.48	9,591.65	60.55	31.93	29.46	-3,416.20	-497.95	1,164.85	1,099.17	65.69	17.733		
14,000.00	10,606.46	12,905.47	9,590.65	62.07	32.41	29.43	-3,516.18	-497.21	1,165.91	1,098.67	67.24	17.339		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 142H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 9973-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
14,100.00	10,606.67	13,005.46	9,589.65	63.59	32.90	29.40	-3,616.17	-496.48	1,166.96	1,098.16	68.80	16.961		
14,200.00	10,606.88	13,105.45	9,588.65	65.12	33.41	29.37	-3,716.15	-495.74	1,168.01	1,097.64	70.38	16.596		
14,300.00	10,607.09	13,205.45	9,587.65	66.66	33.94	29.34	-3,816.14	-495.01	1,169.07	1,097.11	71.96	16.246		
14,400.00	10,607.30	13,305.44	9,586.65	68.20	34.47	29.31	-3,916.12	-494.28	1,170.12	1,096.57	73.55	15.909		
14,500.00	10,607.51	13,405.43	9,585.66	69.74	35.03	29.29	-4,016.11	-493.54	1,171.18	1,096.02	75.15	15.584		
14,600.00	10,607.72	13,505.42	9,584.66	71.29	35.59	29.26	-4,116.09	-492.81	1,172.23	1,095.47	76.76	15.271		
14,700.00	10,607.93	13,605.42	9,583.66	72.84	36.16	29.23	-4,216.08	-492.08	1,173.29	1,094.91	78.38	14.970		
14,800.00	10,608.14	13,705.41	9,582.66	74.40	36.74	29.20	-4,316.06	-491.34	1,174.34	1,094.35	80.00	14.680		
14,900.00	10,608.35	13,805.40	9,581.66	75.96	37.33	29.17	-4,416.05	-490.61	1,175.40	1,093.78	81.62	14.400		
15,000.00	10,608.56	13,905.39	9,580.66	77.52	37.92	29.14	-4,516.03	-489.87	1,176.46	1,093.20	83.26	14.130		
15,100.00	10,608.77	14,005.39	9,579.66	79.09	38.52	29.11	-4,616.02	-489.14	1,177.51	1,092.62	84.90	13.870		
15,200.00	10,608.98	14,105.38	9,578.66	80.66	39.13	29.08	-4,716.00	-488.41	1,178.57	1,092.03	86.54	13.619		
15,300.00	10,609.19	14,205.37	9,577.66	82.23	39.75	29.06	-4,815.99	-487.67	1,179.63	1,091.44	88.19	13.377		
15,400.00	10,609.41	14,305.37	9,576.66	83.80	40.37	29.03	-4,915.97	-486.94	1,180.68	1,090.85	89.84	13.142		
15,500.00	10,609.62	14,405.36	9,575.66	85.38	41.00	29.00	-5,015.96	-486.21	1,181.74	1,090.25	91.50	12.916		
15,600.00	10,609.83	14,505.35	9,574.67	86.96	41.63	28.97	-5,115.94	-485.47	1,182.80	1,089.64	93.16	12.697		
15,700.00	10,610.04	14,605.34	9,573.67	88.54	42.26	28.94	-5,215.93	-484.74	1,183.86	1,089.04	94.82	12.485		
15,800.00	10,610.25	14,705.34	9,572.67	90.12	42.90	28.91	-5,315.91	-484.01	1,184.92	1,088.43	96.49	12.281		
15,900.00	10,610.46	14,805.33	9,571.67	91.71	43.55	28.89	-5,415.90	-483.27	1,185.98	1,087.82	98.16	12.083		
16,000.00	10,610.67	14,905.32	9,570.67	93.29	44.20	28.86	-5,515.88	-482.54	1,187.03	1,087.21	99.83	11.891		
16,100.00	10,610.88	15,005.31	9,569.67	94.88	44.85	28.83	-5,615.87	-481.80	1,188.09	1,086.59	101.50	11.705		
16,200.00	10,611.09	15,105.31	9,568.67	96.47	45.51	28.80	-5,715.85	-481.07	1,189.15	1,085.97	103.18	11.525		
16,300.00	10,611.30	15,205.30	9,567.67	98.07	46.17	28.77	-5,815.84	-480.34	1,190.21	1,085.35	104.86	11.350		
16,400.00	10,611.51	15,305.29	9,566.67	99.66	46.83	28.75	-5,915.82	-479.60	1,191.27	1,084.73	106.55	11.181		
16,500.00	10,611.72	15,405.28	9,565.67	101.25	47.50	28.72	-6,015.81	-478.87	1,192.34	1,084.10	108.23	11.017		
16,600.00	10,611.93	15,505.28	9,564.67	102.85	48.17	28.69	-6,115.79	-478.14	1,193.40	1,083.48	109.92	10.857		
16,700.00	10,612.14	15,605.27	9,563.67	104.45	48.84	28.66	-6,215.78	-477.40	1,194.46	1,082.85	111.61	10.702		
16,800.00	10,612.35	15,705.26	9,562.68	106.05	49.52	28.63	-6,315.76	-476.67	1,195.52	1,082.22	113.30	10.552		
16,900.00	10,612.56	15,805.26	9,561.68	107.65	50.19	28.61	-6,415.75	-475.93	1,196.58	1,081.59	114.99	10.406		
17,000.00	10,612.77	15,905.25	9,560.68	109.25	50.87	28.58	-6,515.73	-475.20	1,197.64	1,080.96	116.68	10.264		
17,100.00	10,612.98	16,005.24	9,559.68	110.85	51.56	28.55	-6,615.72	-474.47	1,198.70	1,080.33	118.38	10.126		
17,200.00	10,613.19	16,105.23	9,558.68	112.46	52.24	28.52	-6,715.70	-473.73	1,199.77	1,079.69	120.07	9.992		
17,300.00	10,613.40	16,205.23	9,557.68	114.06	52.93	28.50	-6,815.69	-473.00	1,200.83	1,079.06	121.77	9.861		
17,400.00	10,613.61	16,305.22	9,556.68	115.67	53.62	28.47	-6,915.67	-472.27	1,201.89	1,078.42	123.47	9.734		
17,500.00	10,613.83	16,405.21	9,555.68	117.27	54.31	28.44	-7,015.66	-471.53	1,202.96	1,077.79	125.17	9.611		
17,600.00	10,614.04	16,505.20	9,554.68	118.88	55.01	28.41	-7,115.64	-470.80	1,204.02	1,077.15	126.87	9.490		
17,700.00	10,614.25	16,605.20	9,553.68	120.49	55.70	28.39	-7,215.63	-470.06	1,205.08	1,076.51	128.57	9.373		
17,800.00	10,614.46	16,705.19	9,552.68	122.10	56.40	28.36	-7,315.61	-469.33	1,206.15	1,075.87	130.28	9.258		
17,900.00	10,614.67	16,805.18	9,551.69	123.71	57.10	28.33	-7,415.60	-468.60	1,207.21	1,075.23	131.98	9.147		
18,000.00	10,614.88	16,905.18	9,550.69	125.32	57.80	28.30	-7,515.58	-467.86	1,208.28	1,074.60	133.68	9.038		
18,058.37	10,615.00	16,963.54	9,550.10	126.26	58.21	28.29	-7,573.95	-467.44	1,208.90	1,074.22	134.68	8.976		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 160H - OH - Plan #2													Offset Site Error: 0.00 usft		
Survey Program: O-LEAM MWD+HDGM														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)				Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	89.69	0.16	29.94	29.94						
100.00	100.00	99.90	99.90	0.09	0.09	89.69	0.16	29.94	29.94	29.77	0.17	174.214			
200.00	200.00	199.90	199.90	0.31	0.31	89.69	0.16	29.94	29.94	29.32	0.62	48.194			
300.00	300.00	299.90	299.90	0.54	0.54	89.69	0.16	29.94	29.94	28.87	1.07	27.961			
400.00	400.00	399.90	399.90	0.76	0.76	89.69	0.16	29.94	29.94	28.42	1.52	19.694			
500.00	500.00	499.90	499.90	0.99	0.98	89.69	0.16	29.94	29.94	27.97	1.97	15.199			
600.00	600.00	599.90	599.90	1.21	1.21	89.69	0.16	29.94	29.94	27.52	2.42	12.375			
700.00	700.00	699.90	699.90	1.43	1.43	89.69	0.16	29.94	29.94	27.07	2.87	10.436			
800.00	800.00	799.90	799.90	1.66	1.66	89.69	0.16	29.94	29.94	26.62	3.32	9.022			
900.00	900.00	899.90	899.90	1.88	1.88	89.69	0.16	29.94	29.94	26.17	3.77	7.946			
1,000.00	1,000.00	999.90	999.90	2.11	2.11	89.69	0.16	29.94	29.94	25.72	4.22	7.099			
1,100.00	1,100.00	1,099.90	1,099.90	2.33	2.33	89.69	0.16	29.94	29.94	25.27	4.67	6.415			
1,200.00	1,200.00	1,199.90	1,199.90	2.56	2.56	89.69	0.16	29.94	29.94	24.82	5.12	5.852			
1,300.00	1,300.00	1,299.90	1,299.90	2.78	2.78	89.69	0.16	29.94	29.94	24.37	5.57	5.379			
1,400.00	1,400.00	1,399.90	1,399.90	3.01	3.01	89.69	0.16	29.94	29.94	23.92	6.02	4.977			
1,500.00	1,500.00	1,499.90	1,499.90	3.23	3.23	89.69	0.16	29.94	29.94	23.48	6.47	4.631			
1,600.00	1,600.00	1,599.90	1,599.90	3.46	3.46	89.69	0.16	29.94	29.94	23.03	6.91	4.330			
1,700.00	1,700.00	1,699.90	1,699.90	3.68	3.68	89.69	0.16	29.94	29.94	22.58	7.36	4.066			
1,800.00	1,800.00	1,799.90	1,799.90	3.91	3.91	89.69	0.16	29.94	29.94	22.13	7.81	3.832			
1,900.00	1,900.00	1,899.90	1,899.90	4.13	4.13	89.69	0.16	29.94	29.94	21.68	8.26	3.623			
2,000.00	2,000.00	1,999.90	1,999.90	4.36	4.36	89.69	0.16	29.94	29.94	21.23	8.71	3.436			
2,100.00	2,100.00	2,099.90	2,099.90	4.58	4.58	89.69	0.16	29.94	29.94	20.78	9.16	3.268			
2,200.00	2,200.00	2,199.90	2,199.90	4.81	4.81	89.69	0.16	29.94	29.94	20.33	9.61	3.115			
2,300.00	2,300.00	2,299.90	2,299.90	5.03	5.03	89.69	0.16	29.94	29.94	19.88	10.06	2.976			
2,400.00	2,400.00	2,399.90	2,399.90	5.26	5.26	89.69	0.16	29.94	29.94	19.43	10.51	2.848			
2,500.00	2,500.00	2,499.90	2,499.90	5.48	5.48	89.69	0.16	29.94	29.94	18.98	10.96	2.732			
2,600.00	2,600.00	2,599.90	2,599.90	5.71	5.70	89.69	0.16	29.94	29.94	18.53	11.41	2.624			
2,700.00	2,700.00	2,699.90	2,699.90	5.93	5.93	89.69	0.16	29.94	29.94	18.08	11.86	2.525			
2,800.00	2,800.00	2,799.90	2,799.90	6.15	6.15	89.69	0.16	29.94	29.94	17.63	12.31	2.432			
2,900.00	2,900.00	2,899.90	2,899.90	6.38	6.38	89.69	0.16	29.94	29.94	17.18	12.76	2.347			
3,000.00	3,000.00	2,999.90	2,999.90	6.60	6.60	89.69	0.16	29.94	29.94	16.73	13.21	2.267 CC, ES			
3,100.00	3,100.00	3,099.57	3,099.56	6.83	6.83	88.42	0.84	30.47	30.49	16.83	13.65	2.233			
3,200.00	3,200.00	3,199.18	3,199.13	7.05	7.04	84.85	2.89	32.07	32.21	18.12	14.09	2.286			
3,300.00	3,300.00	3,298.66	3,298.53	7.28	7.26	79.72	6.30	34.73	35.32	20.79	14.53	2.431			
3,400.00	3,400.00	3,398.32	3,398.02	7.50	7.48	74.23	10.80	38.24	39.78	24.81	14.97	2.658			
3,500.00	3,500.00	3,498.15	3,497.68	7.73	7.70	69.78	15.40	41.83	44.63	29.22	15.41	2.897			
3,600.00	3,600.00	3,598.02	3,597.38	7.95	7.93	44.69	20.01	45.42	49.08	33.23	15.85	3.096			
3,700.00	3,699.96	3,697.96	3,697.15	8.17	8.15	43.58	24.62	49.02	52.34	36.05	16.29	3.213			
3,800.00	3,799.86	3,797.94	3,796.96	8.40	8.38	43.86	29.23	52.61	54.36	37.63	16.73	3.249			
3,844.08	3,843.87	3,842.01	3,840.96	8.50	8.48	44.38	31.26	54.20	54.85	37.92	16.93	3.240			
3,900.00	3,899.69	3,897.93	3,896.78	8.62	8.60	45.18	33.84	56.21	55.33	38.15	17.18	3.221			
4,000.00	3,999.51	3,997.92	3,996.59	8.85	8.83	46.59	38.45	59.81	56.21	38.59	17.62	3.190			
4,100.00	4,099.33	4,097.90	4,096.41	9.07	9.05	47.96	43.06	63.41	57.12	39.05	18.07	3.162			
4,200.00	4,199.15	4,197.89	4,196.22	9.29	9.28	49.28	47.68	67.00	58.07	39.55	18.52	3.136			
4,300.00	4,298.97	4,297.88	4,296.04	9.52	9.51	50.56	52.29	70.60	59.04	40.08	18.96	3.113			
4,400.00	4,398.79	4,397.86	4,395.85	9.75	9.74	51.79	56.90	74.20	60.04	40.63	19.41	3.093			
4,500.00	4,498.61	4,497.85	4,495.67	9.97	9.97	52.99	61.51	77.79	61.08	41.21	19.87	3.074			
4,600.00	4,598.43	4,597.84	4,595.48	10.20	10.20	54.14	66.12	81.39	62.13	41.81	20.32	3.058			
4,700.00	4,698.25	4,697.82	4,695.30	10.43	10.43	55.26	70.73	84.99	63.21	42.44	20.77	3.043			
4,800.00	4,798.07	4,797.81	4,795.12	10.66	10.66	56.34	75.34	88.58	64.31	43.09	21.23	3.030			
4,900.00	4,897.89	4,897.80	4,894.93	10.89	10.89	57.38	79.95	92.18	65.44	43.76	21.68	3.018			
5,000.00	4,997.71	4,997.78	4,994.75	11.12	11.13	58.38	84.57	95.78	66.59	44.45	22.14	3.008			

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 160H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,100.00	5,097.53	5,097.77	5,094.56	11.35	11.36	59.36	89.18	99.37	67.75	45.15	2.998			
5,200.00	5,197.35	5,198.01	5,194.64	11.58	11.58	60.34	93.74	102.93	68.88	45.83	2.988			
5,300.00	5,297.17	5,298.84	5,295.37	11.81	11.77	62.09	97.28	105.69	69.11	45.64	2.944			
5,400.00	5,396.99	5,399.59	5,396.08	12.04	11.95	64.93	99.42	107.36	68.24	44.35	2.856			
5,500.00	5,496.81	5,500.21	5,496.69	12.27	12.12	69.04	100.16	107.94	66.48	42.17	2.734			
5,600.00	5,596.63	5,600.05	5,596.53	12.51	12.32	74.01	100.16	107.94	64.57	39.82	2.608			
5,659.61	5,656.13	5,659.55	5,656.03	12.64	12.45	77.10	100.16	107.94	63.68	38.64	2.544			
5,700.00	5,696.46	5,699.88	5,696.36	12.73	12.54	79.11	100.16	107.94	63.21	37.99	2.507			
5,800.00	5,796.36	5,799.78	5,796.26	12.91	12.76	83.08	100.16	107.94	62.52	36.90	2.440			
5,900.00	5,896.32	5,899.74	5,896.22	13.08	12.98	85.53	100.16	107.94	62.26	36.23	2.392			
6,003.69	6,000.00	6,003.42	5,999.90	13.26	13.21	108.60	100.16	107.94	62.19	35.75	2.352			
6,100.00	6,096.31	6,099.73	6,096.21	13.45	13.42	108.60	100.16	107.94	62.19	35.35	2.317			
6,200.00	6,196.31	6,199.73	6,196.21	13.67	13.64	108.60	100.16	107.94	62.19	34.91	2.279			
6,300.00	6,296.31	6,299.73	6,296.21	13.89	13.86	108.60	100.16	107.94	62.19	34.46	2.243			
6,400.00	6,396.31	6,399.73	6,396.21	14.12	14.09	108.60	100.16	107.94	62.19	34.02	2.208			
6,500.00	6,496.31	6,499.73	6,496.21	14.34	14.31	108.60	100.16	107.94	62.19	33.58	2.173			
6,600.00	6,596.31	6,599.73	6,596.21	14.56	14.53	108.60	100.16	107.94	62.19	33.13	2.140			
6,700.00	6,696.31	6,699.73	6,696.21	14.78	14.75	108.60	100.16	107.94	62.19	32.69	2.108			
6,800.00	6,796.31	6,799.73	6,796.21	15.00	14.97	108.60	100.16	107.94	62.19	32.24	2.077			
6,900.00	6,896.31	6,899.73	6,896.21	15.23	15.20	108.60	100.16	107.94	62.19	31.80	2.046			
7,000.00	6,996.31	6,999.73	6,996.21	15.45	15.42	108.60	100.16	107.94	62.19	31.35	2.017			
7,100.00	7,096.31	7,099.73	7,096.21	15.67	15.64	108.60	100.16	107.94	62.19	30.91	1.988			
7,200.00	7,196.31	7,199.73	7,196.21	15.89	15.86	108.60	100.16	107.94	62.19	30.46	1.960			
7,300.00	7,296.31	7,299.73	7,296.21	16.12	16.09	108.60	100.16	107.94	62.19	30.02	1.933			
7,400.00	7,396.31	7,399.73	7,396.21	16.34	16.31	108.60	100.16	107.94	62.19	29.57	1.907			
7,500.00	7,496.31	7,499.73	7,496.21	16.56	16.53	108.60	100.16	107.94	62.19	29.13	1.881			
7,600.00	7,596.31	7,599.73	7,596.21	16.78	16.75	108.60	100.16	107.94	62.19	28.68	1.856			
7,700.00	7,696.31	7,699.73	7,696.21	17.01	16.98	108.60	100.16	107.94	62.19	28.24	1.832			
7,800.00	7,796.31	7,799.73	7,796.21	17.23	17.20	108.60	100.16	107.94	62.19	27.79	1.808			
7,900.00	7,896.31	7,899.73	7,896.21	17.45	17.42	108.60	100.16	107.94	62.19	27.35	1.785			
8,000.00	7,996.31	7,999.73	7,996.21	17.68	17.64	108.60	100.16	107.94	62.19	26.90	1.762			
8,100.00	8,096.31	8,099.73	8,096.21	17.90	17.87	108.60	100.16	107.94	62.19	26.46	1.740			
8,200.00	8,196.31	8,199.73	8,196.21	18.12	18.09	108.60	100.16	107.94	62.19	26.01	1.719			
8,300.00	8,296.31	8,299.73	8,296.21	18.34	18.31	108.60	100.16	107.94	62.19	25.56	1.698			
8,400.00	8,396.31	8,399.73	8,396.21	18.57	18.54	108.60	100.16	107.94	62.19	25.12	1.678			
8,500.00	8,496.31	8,499.73	8,496.21	18.79	18.76	108.60	100.16	107.94	62.19	24.67	1.658			
8,600.00	8,596.31	8,599.73	8,596.21	19.01	18.98	108.60	100.16	107.94	62.19	24.23	1.638			
8,700.00	8,696.31	8,699.73	8,696.21	19.24	19.20	108.60	100.16	107.94	62.19	23.78	1.619			
8,800.00	8,796.31	8,799.73	8,796.21	19.46	19.43	108.60	100.16	107.94	62.19	23.33	1.601			
8,900.00	8,896.31	8,899.73	8,896.21	19.68	19.65	108.60	100.16	107.94	62.19	22.89	1.582			
9,000.00	8,996.31	8,999.73	8,996.21	19.91	19.87	108.60	100.16	107.94	62.19	22.44	1.565			
9,006.83	9,003.15	9,006.57	9,003.05	19.92	19.89	108.60	100.16	107.94	62.19	22.41	1.563 SF			
9,100.00	9,096.31	9,099.73	9,096.21	20.13	20.10	110.29	98.20	107.95	62.88	22.71	1.565			
9,200.00	9,196.31	9,199.73	9,196.21	20.35	20.32	122.15	82.87	108.07	70.40	30.13	1.748			
9,300.00	9,296.31	9,299.73	9,296.21	20.58	20.55	137.43	55.47	108.27	91.77	52.28	2.324			
9,400.00	9,396.31	9,399.73	9,396.21	20.80	20.77	148.99	20.99	108.52	129.50	91.63	3.419			
9,500.00	9,496.31	9,499.73	9,496.21	21.03	21.00	156.26	-15.99	108.80	180.93	144.89	5.019			
9,600.00	9,596.31	9,599.73	9,596.21	21.25	21.22	160.78	-52.33	109.06	242.65	208.31	7.066			
9,700.00	9,696.31	9,699.73	9,696.21	21.47	21.44	163.70	-86.27	109.31	312.01	279.14	9.494			
9,800.00	9,796.31	9,799.73	9,796.21	21.70	21.67	165.68	-117.09	109.54	387.11	355.48	12.239			
9,900.00	9,896.31	9,899.73	9,896.21	21.92	21.89	167.03	-143.66	109.73	466.60	436.03	15.262			
10,000.00	9,996.31	9,999.73	9,996.21	22.14	22.11	168.10	-169.12	109.92	549.47	519.65	18.423			

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 160H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
10,030.73	10,027.04	9,650.00	9,542.98	22.21	20.97	168.71	-185.79	110.05	575.72	545.71	30.01	19.182		
10,050.00	10,046.31	9,650.00	9,542.98	22.25	20.97	-10.33	-185.79	110.05	591.85	562.15	29.70	19.930		
10,100.00	10,096.15	9,650.00	9,542.98	22.33	20.97	-9.11	-185.79	110.05	632.91	604.02	28.89	21.910		
10,150.00	10,145.45	9,671.86	9,553.56	22.41	21.03	-7.81	-204.92	110.19	672.04	643.29	28.74	23.380		
10,200.00	10,193.86	9,700.00	9,566.10	22.48	21.12	-6.78	-230.10	110.37	709.58	680.86	28.72	24.708		
10,250.00	10,241.00	9,700.00	9,566.10	22.56	21.12	-6.23	-230.10	110.37	744.55	716.64	27.91	26.676		
10,300.00	10,286.51	9,718.63	9,573.72	22.63	21.18	-5.64	-247.10	110.50	777.61	750.02	27.59	28.182		
10,350.00	10,330.05	9,735.13	9,580.00	22.70	21.24	-5.19	-262.36	110.61	808.44	781.22	27.22	29.704		
10,400.00	10,371.27	9,750.00	9,585.28	22.77	21.30	-4.82	-276.26	110.71	836.95	810.13	26.81	31.213		
10,450.00	10,409.88	9,769.16	9,591.55	22.83	21.37	-4.51	-294.37	110.84	863.05	836.54	26.51	32.555		
10,500.00	10,445.58	9,800.00	9,600.36	22.89	21.50	-4.22	-323.91	111.06	886.96	860.54	26.42	33.575		
10,550.00	10,478.09	9,800.00	9,600.36	22.96	21.50	-4.06	-323.91	111.06	907.85	882.01	25.84	35.136		
10,600.00	10,507.17	9,822.14	9,605.70	23.05	21.59	-3.88	-345.40	111.22	926.38	900.73	25.65	36.116		
10,650.00	10,532.59	9,850.00	9,611.23	23.17	21.72	-3.73	-372.70	111.42	942.45	916.89	25.56	36.878		
10,700.00	10,554.17	9,850.00	9,611.23	23.31	21.72	-3.64	-372.70	111.42	955.69	930.50	25.19	37.934		
10,750.00	10,571.73	9,876.60	9,615.27	23.47	21.85	-3.55	-398.99	111.61	966.19	941.03	25.16	38.396		
10,800.00	10,585.15	9,900.00	9,617.81	23.65	21.97	-3.49	-422.25	111.79	974.11	948.97	25.14	38.745		
10,850.00	10,594.32	9,900.00	9,617.81	23.86	21.97	-3.46	-422.25	111.79	979.47	954.42	25.05	39.103		
10,900.00	10,599.17	9,931.79	9,619.73	24.08	22.14	-3.44	-453.97	112.02	981.64	956.46	25.17	38.997		
10,929.52	10,600.00	9,950.00	9,620.04	24.22	22.24	-3.43	-472.18	112.15	981.84	956.59	25.25	38.877		
10,948.34	10,600.04	9,950.00	9,620.04	24.32	22.24	-3.43	-472.18	112.15	981.66	956.37	25.29	38.812		
11,000.00	10,600.15	9,988.56	9,619.65	24.60	22.46	-3.43	-510.74	112.44	982.22	956.73	25.49	38.527		
11,100.00	10,600.36	10,088.55	9,618.52	25.21	23.12	-3.43	-610.72	113.17	983.56	957.58	25.98	37.861		
11,200.00	10,600.57	10,188.54	9,617.39	25.90	23.87	-3.42	-710.70	113.91	984.89	958.36	26.54	37.116		
11,300.00	10,600.78	10,288.53	9,616.27	26.69	24.70	-3.42	-810.68	114.65	986.23	959.07	27.16	36.310		
11,400.00	10,600.99	10,388.52	9,615.14	27.54	25.61	-3.41	-910.66	115.38	987.56	959.71	27.85	35.458		
11,500.00	10,601.20	10,488.51	9,614.01	28.47	26.59	-3.41	-1,010.65	116.12	988.90	960.29	28.60	34.574		
11,600.00	10,601.41	10,588.50	9,612.89	29.46	27.63	-3.41	-1,110.63	116.85	990.23	960.82	29.41	33.672		
11,700.00	10,601.62	10,688.50	9,611.76	30.50	28.73	-3.40	-1,210.61	117.59	991.57	961.30	30.26	32.764		
11,800.00	10,601.83	10,788.49	9,610.64	31.59	29.88	-3.40	-1,310.59	118.33	992.90	961.73	31.17	31.858		
11,900.00	10,602.04	10,888.48	9,609.51	32.73	31.07	-3.39	-1,410.57	119.06	994.24	962.12	32.11	30.962		
12,000.00	10,602.25	10,988.47	9,608.38	33.91	32.31	-3.39	-1,510.56	119.80	995.57	962.48	33.10	30.082		
12,100.00	10,602.46	11,088.46	9,607.26	35.13	33.57	-3.38	-1,610.54	120.53	996.91	962.79	34.11	29.222		
12,200.00	10,602.67	11,188.45	9,606.13	36.38	34.87	-3.38	-1,710.52	121.27	998.24	963.07	35.17	28.387		
12,300.00	10,602.88	11,288.44	9,605.00	37.66	36.20	-3.38	-1,810.50	122.01	999.57	963.33	36.25	27.577		
12,400.00	10,603.09	11,388.43	9,603.88	38.97	37.55	-3.37	-1,910.48	122.74	1,000.91	963.56	37.35	26.795		
12,500.00	10,603.30	11,488.42	9,602.75	40.30	38.92	-3.37	-2,010.47	123.48	1,002.24	963.76	38.49	26.041		
12,600.00	10,603.51	11,588.41	9,601.62	41.66	40.31	-3.36	-2,110.45	124.21	1,003.58	963.94	39.64	25.316		
12,700.00	10,603.72	11,688.41	9,600.50	43.03	41.72	-3.36	-2,210.43	124.95	1,004.91	964.10	40.82	24.620		
12,800.00	10,603.93	11,788.40	9,599.37	44.42	43.15	-3.35	-2,310.41	125.69	1,006.25	964.24	42.01	23.951		
12,900.00	10,604.14	11,888.39	9,598.24	45.83	44.59	-3.35	-2,410.39	126.42	1,007.58	964.36	43.22	23.311		
13,000.00	10,604.35	11,988.38	9,597.12	47.25	46.04	-3.34	-2,510.38	127.16	1,008.92	964.47	44.45	22.697		
13,100.00	10,604.56	12,088.37	9,595.99	48.69	47.51	-3.34	-2,610.36	127.89	1,010.25	964.56	45.69	22.109		
13,200.00	10,604.78	12,188.36	9,594.86	50.14	48.98	-3.34	-2,710.34	128.63	1,011.59	964.64	46.95	21.546		
13,300.00	10,604.99	12,288.35	9,593.74	51.60	50.47	-3.33	-2,810.32	129.37	1,012.92	964.71	48.22	21.008		
13,400.00	10,605.20	12,388.34	9,592.61	53.07	51.97	-3.33	-2,910.30	130.10	1,014.26	964.76	49.50	20.492		
13,500.00	10,605.41	12,488.33	9,591.49	54.55	53.47	-3.32	-3,010.29	130.84	1,015.59	964.81	50.79	19.997		
13,600.00	10,605.62	12,588.33	9,590.36	56.04	54.98	-3.32	-3,110.27	131.57	1,016.93	964.84	52.09	19.524		
13,700.00	10,605.83	12,688.32	9,589.23	57.53	56.50	-3.32	-3,210.25	132.31	1,018.26	964.87	53.39	19.070		
13,800.00	10,606.04	12,788.31	9,588.11	59.04	58.03	-3.31	-3,310.23	133.05	1,019.60	964.89	54.71	18.636		
13,900.00	10,606.25	12,888.30	9,586.98	60.55	59.56	-3.31	-3,410.21	133.78	1,020.93	964.90	56.04	18.219		
14,000.00	10,606.46	12,988.29	9,585.85	62.07	61.10	-3.30	-3,510.20	134.52	1,022.27	964.90	57.37	17.819		

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 Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 160H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
14,100.00	10,606.67	13,088.28	9,584.73	63.59	62.64	-3.30	-3,610.18	135.25	1,023.60	964.89	58.71	17.435		
14,200.00	10,606.88	13,188.27	9,583.60	65.12	64.19	-3.29	-3,710.16	135.99	1,024.94	964.88	60.05	17.067		
14,300.00	10,607.09	13,288.26	9,582.47	66.66	65.74	-3.29	-3,810.14	136.73	1,026.27	964.87	61.41	16.713		
14,400.00	10,607.30	13,388.25	9,581.35	68.20	67.29	-3.29	-3,910.12	137.46	1,027.61	964.85	62.76	16.373		
14,500.00	10,607.51	13,488.25	9,580.22	69.74	68.85	-3.28	-4,010.11	138.20	1,028.94	964.82	64.12	16.046		
14,600.00	10,607.72	13,588.24	9,579.09	71.29	70.42	-3.28	-4,110.09	138.93	1,030.28	964.79	65.49	15.732		
14,700.00	10,607.93	13,688.23	9,577.97	72.84	71.98	-3.27	-4,210.07	139.67	1,031.61	964.75	66.86	15.429		
14,800.00	10,608.14	13,788.22	9,576.84	74.40	73.55	-3.27	-4,310.05	140.41	1,032.95	964.71	68.24	15.137		
14,900.00	10,608.35	13,888.21	9,575.72	75.96	75.13	-3.27	-4,410.03	141.14	1,034.28	964.66	69.62	14.857		
15,000.00	10,608.56	13,988.20	9,574.59	77.52	76.70	-3.26	-4,510.02	141.88	1,035.62	964.62	71.00	14.586		
15,100.00	10,608.77	14,088.19	9,573.46	79.09	78.28	-3.26	-4,610.00	142.62	1,036.95	964.56	72.39	14.325		
15,200.00	10,608.98	14,188.18	9,572.34	80.66	79.86	-3.25	-4,709.98	143.35	1,038.29	964.51	73.78	14.073		
15,300.00	10,609.19	14,288.17	9,571.21	82.23	81.44	-3.25	-4,809.96	144.09	1,039.62	964.45	75.17	13.830		
15,400.00	10,609.41	14,388.16	9,570.08	83.80	83.03	-3.25	-4,909.94	144.82	1,040.96	964.39	76.57	13.595		
15,500.00	10,609.62	14,488.16	9,568.96	85.38	84.62	-3.24	-5,009.93	145.56	1,042.29	964.32	77.97	13.368		
15,600.00	10,609.83	14,588.15	9,567.83	86.96	86.20	-3.24	-5,109.91	146.30	1,043.63	964.26	79.37	13.149		
15,700.00	10,610.04	14,688.14	9,566.70	88.54	87.80	-3.23	-5,209.89	147.03	1,044.96	964.19	80.78	12.937		
15,800.00	10,610.25	14,788.13	9,565.58	90.12	89.39	-3.23	-5,309.87	147.77	1,046.30	964.11	82.18	12.731		
15,900.00	10,610.46	14,888.12	9,564.45	91.71	90.98	-3.23	-5,409.85	148.50	1,047.63	964.04	83.59	12.533		
16,000.00	10,610.67	14,988.11	9,563.32	93.29	92.58	-3.22	-5,509.84	149.24	1,048.97	963.96	85.00	12.340		
16,100.00	10,610.88	15,088.10	9,562.20	94.88	94.17	-3.22	-5,609.82	149.98	1,050.30	963.88	86.42	12.154		
16,200.00	10,611.09	15,188.09	9,561.07	96.47	95.77	-3.21	-5,709.80	150.71	1,051.64	963.80	87.83	11.973		
16,300.00	10,611.30	15,288.08	9,559.94	98.07	97.37	-3.21	-5,809.78	151.45	1,052.97	963.72	89.25	11.798		
16,400.00	10,611.51	15,388.08	9,558.82	99.66	98.97	-3.21	-5,909.76	152.18	1,054.31	963.64	90.67	11.628		
16,500.00	10,611.72	15,488.07	9,557.69	101.25	100.58	-3.20	-6,009.75	152.92	1,055.64	963.55	92.09	11.463		
16,600.00	10,611.93	15,588.06	9,556.57	102.85	102.18	-3.20	-6,109.73	153.66	1,056.98	963.46	93.51	11.303		
16,700.00	10,612.14	15,688.05	9,555.44	104.45	103.78	-3.19	-6,209.71	154.39	1,058.31	963.37	94.94	11.147		
16,800.00	10,612.35	15,788.04	9,554.31	106.05	105.39	-3.19	-6,309.69	155.13	1,059.65	963.28	96.36	10.996		
16,900.00	10,612.56	15,888.03	9,553.19	107.65	107.00	-3.19	-6,409.67	155.86	1,060.98	963.19	97.79	10.850		
17,000.00	10,612.77	15,988.02	9,552.06	109.25	108.61	-3.18	-6,509.66	156.60	1,062.32	963.10	99.22	10.707		
17,100.00	10,612.98	16,088.01	9,550.93	110.85	110.21	-3.18	-6,609.64	157.34	1,063.65	963.00	100.65	10.568		
17,200.00	10,613.19	16,188.00	9,549.81	112.46	111.82	-3.17	-6,709.62	158.07	1,064.99	962.91	102.08	10.433		
17,300.00	10,613.40	16,287.99	9,548.68	114.06	113.43	-3.17	-6,809.60	158.81	1,066.32	962.81	103.51	10.301		
17,400.00	10,613.61	16,387.99	9,547.55	115.67	115.04	-3.17	-6,909.58	159.54	1,067.66	962.71	104.94	10.174		
17,500.00	10,613.83	16,487.98	9,546.43	117.27	116.66	-3.16	-7,009.57	160.28	1,068.99	962.61	106.38	10.049		
17,600.00	10,614.04	16,587.97	9,545.30	118.88	118.27	-3.16	-7,109.55	161.02	1,070.33	962.51	107.81	9.928		
17,700.00	10,614.25	16,687.96	9,544.17	120.49	119.88	-3.16	-7,209.53	161.75	1,071.66	962.41	109.25	9.809		
17,800.00	10,614.46	16,787.95	9,543.05	122.10	121.50	-3.15	-7,309.51	162.49	1,073.00	962.31	110.69	9.694		
17,900.00	10,614.67	16,887.94	9,541.92	123.71	123.11	-3.15	-7,409.49	163.22	1,074.33	962.21	112.13	9.581		
18,000.00	10,614.88	16,987.93	9,540.80	125.32	124.73	-3.14	-7,509.48	163.96	1,075.67	962.10	113.57	9.472		
18,058.37	10,615.00	17,046.30	9,540.14	126.26	125.67	-3.14	-7,567.84	164.39	1,076.45	962.04	114.41	9.409		

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

LEAM Drilling Systems LLC

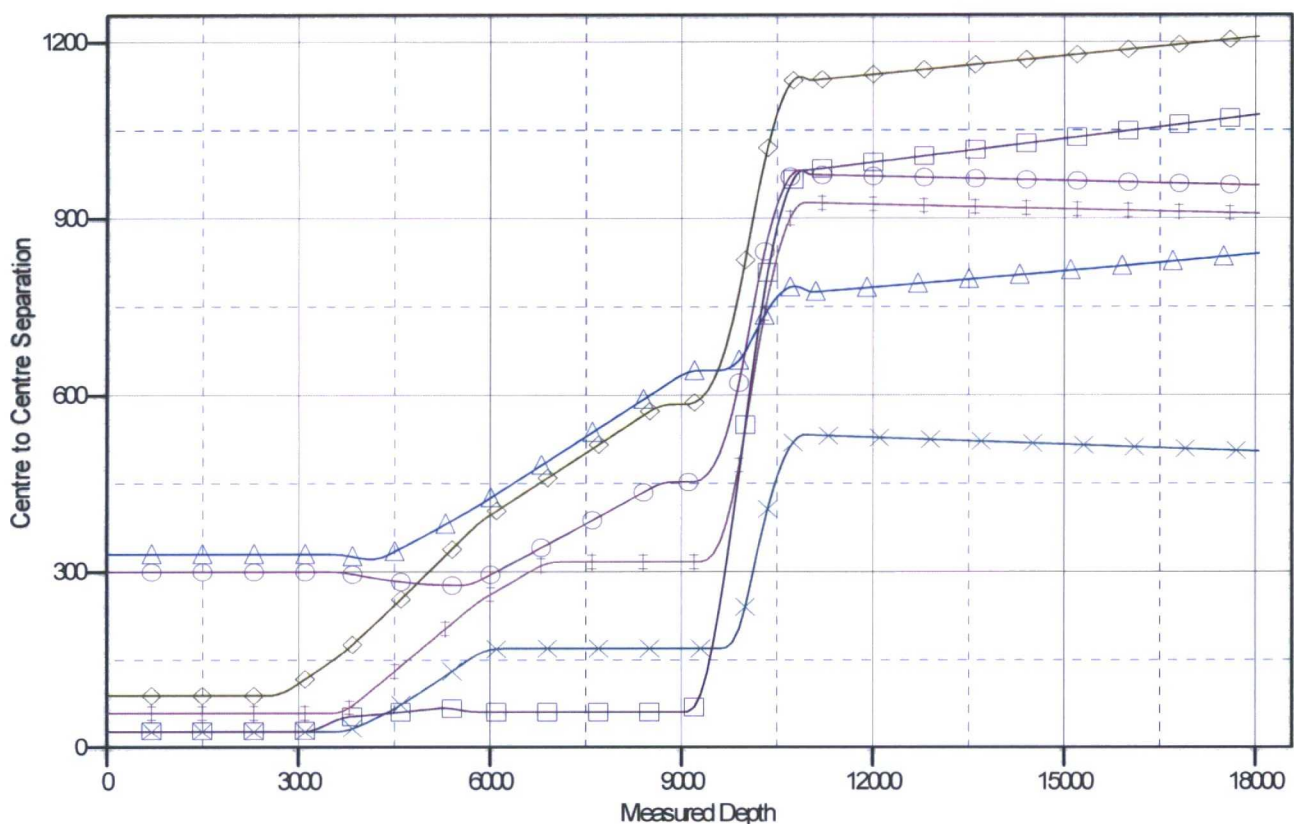
Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 86H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3710.4' GE + 23.5' KB @ 3733.90usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 86H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3710.4' GE + 23.5' KB @ 3733.90usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: Thistle Unit 86H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.41°

Ladder Plot



LEGEND

- Thistle Unit 142H, OH, Plan #2 V0
- Thistle Unit 125H, OH, Plan #2 V0
- Thistle Unit 114H, OH, Plan #2 V0
- Thistle Unit 110H, OH, Plan #2 V0
- Thistle Unit 160H, OH, Plan #2 V0
- Thistle Unit 133H, OH, Plan #2 V0

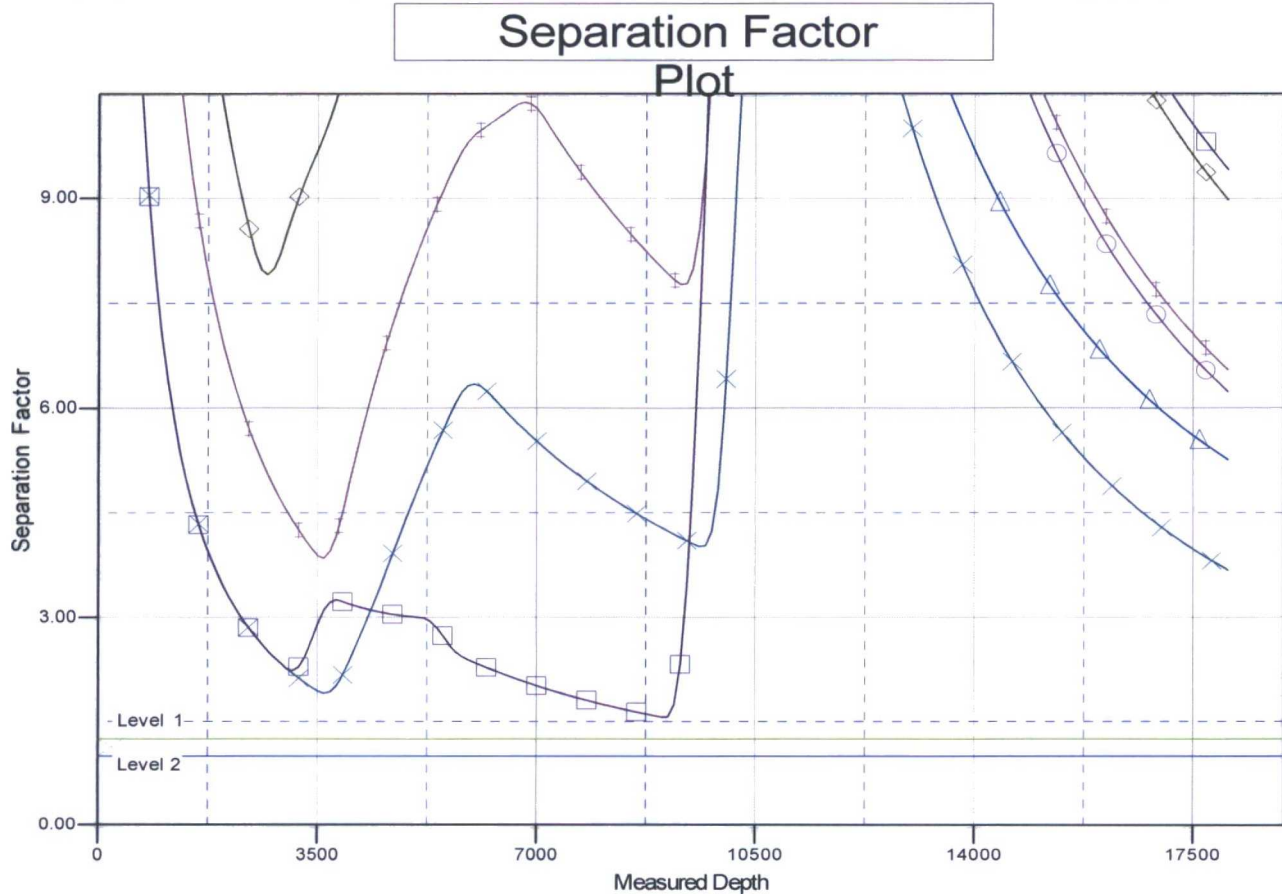
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LEGEND

- ◆ Thistle Unit 142H, OH, Plan #2 V0
- ✕ Thistle Unit 125H, OH, Plan #2 V0
- ⊖ Thistle Unit 114H, OH, Plan #2 V0
- ✚ Thistle Unit 110H, OH, Plan #2 V0
- ⊞ Thistle Unit 160H, OH, Plan #2 V0
- ⬠ Thistle Unit 133H, OH, Plan #2 V0