

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Dzurisin
 Site Error: 0.00
 Reference Well: Thistle Unit 144H
 Well Error: 0.00
 Reference Wellbore: Wellbore #1
 Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
 TVD Reference: 1 @ 3673.20ft
 MD Reference: 1 @ 3673.20ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000 US Production
 Offset TVD Reference: Offset Datum

HOBBS OCD

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

FEB 13 2017

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Risk Settings	
Vertical Depth for Analysis:	ft (Below TVD Reference Datum)
Level of Acceptable Risk (1 in):	
Minimum Separation:	0 ft

Survey Tool Program		Date	8/1/2016		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,659.64	Plan 1 (Wellbore #1)	MWD	MWD - Standard	

Summary		Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Site Name							
Offset Well - Wellbore - Design							
Dzurisin							
Thistle Unit 145H - Wellbore #1 - Plan 1		3,511.25	3,512.95	50.02	34.51	3.225 CC	
Thistle Unit 145H - Wellbore #1 - Plan 1		3,700.00	3,703.12	50.44	34.15	3.097 ES	
Thistle Unit 145H - Wellbore #1 - Plan 1		3,900.00	3,904.53	52.15	35.06	3.052 SF	
Thistle Unit 156H - Wellbore #1 - Plan 1		3,466.33	3,467.33	150.06	134.76	9.804 CC	
Thistle Unit 156H - Wellbore #1 - Plan 1		3,500.00	3,500.00	150.07	134.61	9.709 ES	
Thistle Unit 156H - Wellbore #1 - Plan 1		17,659.64	17,065.30	983.93	554.53	2.291 SF	
Thistle Unit 1H - Wellbore #1 - Plan 1		3,466.40	3,467.20	100.03	84.73	6.535 CC	
Thistle Unit 1H - Wellbore #1 - Plan 1		3,500.00	3,500.00	100.04	84.58	6.472 ES	
Thistle Unit 1H - Wellbore #1 - Plan 1		17,659.64	17,720.49	889.85	416.19	1.879 SF	

Offset Design		Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1										Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance				Minimum Separation		Separation Factor	Risk Factor	Probability of Collision	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risk Factor	Probability of Collision	Warning
0.00	0.00	1.60	1.60	0.00	0.00	-90.33	50.02				0		
100.00	100.00	101.60	101.60	0.09	0.09	-90.33	50.02	49.85	0.18	284.951	0		
200.00	200.00	201.60	201.60	0.31	0.31	-90.33	50.02	49.40	0.63	80.024	0		
300.00	300.00	301.60	301.60	0.54	0.54	-90.33	50.02	48.95	1.07	46.548	0		
400.00	400.00	401.60	401.60	0.76	0.76	-90.33	50.02	48.50	1.52	32.819	0		
500.00	500.00	501.60	501.60	0.99	0.99	-90.33	50.02	48.05	1.97	25.344	0		
600.00	600.00	601.60	601.60	1.21	1.21	-90.33	50.02	47.60	2.42	20.642	0		
700.00	700.00	701.60	701.60	1.43	1.44	-90.33	50.02	47.15	2.87	17.412	0		
800.00	800.00	801.60	801.60	1.66	1.66	-90.33	50.02	46.70	3.32	15.056	0		
900.00	900.00	901.60	901.60	1.88	1.89	-90.33	50.02	46.25	3.77	13.262	0		
1,000.00	1,000.00	1,001.60	1,001.60	2.11	2.11	-90.33	50.02	45.80	4.22	11.850	0		
1,100.00	1,100.00	1,101.60	1,101.60	2.33	2.34	-90.33	50.02	45.35	4.67	10.709	0		
1,200.00	1,200.00	1,201.60	1,201.60	2.56	2.56	-90.33	50.02	44.90	5.12	9.769	0		
1,300.00	1,300.00	1,301.60	1,301.60	2.78	2.79	-90.33	50.02	44.45	5.57	8.981	0		

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

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Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision		
1,400.00	1,400.00	1,401.60	1,401.60	3.01	3.01	-90.33	50.02	44.00	6.02	8.310	0			
1,500.00	1,500.00	1,501.60	1,501.60	3.23	3.24	-90.33	50.02	43.55	6.47	7.732	0			
1,600.00	1,600.00	1,601.60	1,601.60	3.46	3.46	-90.33	50.02	43.10	6.92	7.230	0			
1,700.00	1,700.00	1,701.60	1,701.60	3.68	3.69	-90.33	50.02	42.65	7.37	6.789	0			
1,800.00	1,800.00	1,801.60	1,801.60	3.91	3.91	-90.33	50.02	42.20	7.82	6.399	0			
1,900.00	1,900.00	1,901.60	1,901.60	4.13	4.14	-90.33	50.02	41.75	8.27	6.051	0			
2,000.00	2,000.00	2,001.60	2,001.60	4.36	4.36	-90.33	50.02	41.30	8.72	5.739	0			
2,100.00	2,100.00	2,101.60	2,101.60	4.58	4.58	-90.33	50.02	40.85	9.17	5.457	0			
2,200.00	2,200.00	2,201.60	2,201.60	4.81	4.81	-90.33	50.02	40.41	9.62	5.202	0			
2,300.00	2,300.00	2,301.60	2,301.60	5.03	5.03	-90.33	50.02	39.96	10.07	4.970	0			
2,400.00	2,400.00	2,401.60	2,401.60	5.26	5.26	-90.33	50.02	39.51	10.51	4.757	0			
2,500.00	2,500.00	2,501.60	2,501.60	5.48	5.48	-90.33	50.02	39.06	10.96	4.562	0			
2,600.00	2,600.00	2,601.60	2,601.60	5.71	5.71	-90.33	50.02	38.61	11.41	4.382	0			
2,700.00	2,700.00	2,701.60	2,701.60	5.93	5.93	-90.33	50.02	38.16	11.86	4.216	0			
2,800.00	2,800.00	2,801.60	2,801.60	6.15	6.16	-90.33	50.02	37.71	12.31	4.062	0			
2,900.00	2,900.00	2,901.60	2,901.60	6.38	6.38	-90.33	50.02	37.26	12.76	3.919	0			
3,000.00	3,000.00	3,001.60	3,001.60	6.60	6.61	-90.33	50.02	36.81	13.21	3.786	0			
3,100.00	3,100.00	3,101.60	3,101.60	6.83	6.83	-90.33	50.02	36.36	13.66	3.661	0			
3,200.00	3,200.00	3,201.60	3,201.60	7.05	7.06	-90.33	50.02	35.91	14.11	3.545	0			
3,300.00	3,300.00	3,301.60	3,301.60	7.28	7.28	-90.33	50.02	35.46	14.56	3.435	0			
3,400.00	3,400.00	3,401.60	3,401.60	7.50	7.51	-90.33	50.02	35.01	15.01	3.332	0			
3,500.00	3,500.00	3,501.61	3,501.61	7.73	7.73	-90.33	50.02	34.56	15.46	3.236	0			
3,511.25	3,511.25	3,512.95	3,512.95	7.75	7.76	179.68	50.02	34.51	15.51	3.225	0		CC	
3,600.00	3,600.00	3,602.37	3,602.37	7.94	7.95	-179.81	50.11	34.22	15.89	3.154	0			
3,700.00	3,699.96	3,703.12	3,703.08	8.14	8.17	-178.28	50.44	34.15	16.29	3.097	0		ES	
3,800.00	3,799.86	3,803.85	3,803.70	8.35	8.39	-175.80	51.08	34.40	16.69	3.061	0			
3,900.00	3,899.68	3,904.53	3,904.19	8.56	8.61	-172.45	52.15	35.06	17.09	3.052	0		SF	
4,000.00	3,999.37	4,005.13	4,004.47	8.79	8.85	-168.37	53.77	36.29	17.49	3.075	0			
4,100.00	4,098.99	4,105.03	4,103.99	9.03	9.09	-164.24	55.94	38.02	17.92	3.122	0			
4,200.00	4,198.60	4,204.92	4,203.51	9.27	9.34	-160.43	58.37	40.01	18.36	3.179	0			
4,300.00	4,298.22	4,304.82	4,303.03	9.52	9.59	-156.95	61.04	42.22	18.82	3.244	0			
4,400.00	4,397.84	4,404.72	4,402.55	9.77	9.85	-153.76	63.92	44.63	19.29	3.314	0			
4,500.00	4,497.46	4,504.62	4,502.06	10.04	10.11	-150.86	66.98	47.20	19.77	3.387	0			
4,600.00	4,597.08	4,604.52	4,601.58	10.30	10.38	-148.21	70.19	49.92	20.27	3.463	0			
4,700.00	4,696.70	4,704.42	4,701.10	10.57	10.65	-145.80	73.54	52.76	20.78	3.539	0			
4,800.00	4,796.32	4,804.31	4,800.62	10.85	10.93	-143.61	77.01	55.71	21.30	3.615	0			
4,900.00	4,895.94	4,904.21	4,900.14	11.13	11.21	-141.61	80.58	58.75	21.83	3.691	0			
5,000.00	4,995.56	5,004.11	4,999.65	11.41	11.49	-139.78	84.25	61.87	22.38	3.765	0			
5,100.00	5,095.18	5,104.01	5,099.17	11.70	11.78	-138.10	87.99	65.06	22.93	3.838	0			
5,200.00	5,194.80	5,203.91	5,198.69	11.99	12.07	-136.56	91.80	68.31	23.49	3.908	0			
5,300.00	5,294.42	5,303.80	5,298.21	12.28	12.36	-135.14	95.67	71.62	24.05	3.977	0			
5,400.00	5,394.04	5,403.70	5,397.73	12.58	12.65	-133.84	99.60	74.97	24.63	4.044	0			
5,500.00	5,493.66	5,503.60	5,497.24	12.88	12.95	-132.63	103.57	78.36	25.21	4.109	0			
5,600.00	5,593.28	5,603.50	5,596.76	13.18	13.25	-131.52	107.58	81.79	25.79	4.171	0			
5,700.00	5,692.90	5,703.40	5,696.28	13.48	13.55	-130.48	111.64	85.25	26.38	4.231	0			
5,800.00	5,792.52	5,803.30	5,795.80	13.78	13.85	-129.52	115.72	88.74	26.98	4.289	0			
5,900.00	5,892.14	5,903.19	5,895.32	14.09	14.16	-128.62	119.84	92.26	27.58	4.345	0			
6,000.00	5,991.76	6,003.09	5,994.84	14.40	14.46	-127.79	123.98	95.80	28.18	4.399	0			
6,100.00	6,091.37	6,102.99	6,094.35	14.71	14.77	-127.00	128.15	99.36	28.79	4.451	0			
6,200.00	6,190.99	6,202.89	6,193.87	15.02	15.08	-126.27	132.35	102.94	29.40	4.501	0			
6,300.00	6,290.61	6,302.79	6,293.39	15.34	15.39	-125.58	136.56	106.54	30.02	4.549	0			
6,400.00	6,390.23	6,402.69	6,392.91	15.65	15.71	-124.93	140.79	110.15	30.64	4.596	0			
6,500.00	6,489.85	6,502.58	6,492.43	15.97	16.02	-124.33	145.04	113.78	31.26	4.640	0			
6,600.00	6,589.47	6,602.48	6,591.94	16.29	16.33	-123.75	149.30	117.42	31.88	4.683	0			

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Reference Design: Plan 1

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Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision		
6,700.00	6,689.09	6,702.38	6,691.46	16.61	16.65	-123.21	153.58	121.07	32.50	4.725	0			
6,800.00	6,788.71	6,802.28	6,790.98	16.93	16.97	-122.70	157.87	124.73	33.13	4.765	0			
6,900.00	6,888.33	6,902.18	6,890.50	17.25	17.28	-122.21	162.17	128.40	33.76	4.803	0			
7,000.00	6,987.95	7,002.07	6,990.02	17.57	17.60	-121.75	166.48	132.09	34.39	4.840	0			
7,100.00	7,087.61	7,101.98	7,089.54	17.84	17.92	-121.20	170.58	135.58	34.99	4.875	0			
7,200.00	7,187.33	7,201.88	7,189.06	18.04	18.24	-120.44	174.25	138.69	35.56	4.900	0			
7,300.00	7,287.12	7,301.78	7,288.58	18.24	18.56	-119.46	177.52	141.39	36.13	4.913	0			
7,400.00	7,386.96	7,401.67	7,388.09	18.43	18.89	-118.27	180.42	143.72	36.70	4.916	0			
7,500.00	7,486.84	7,501.54	7,487.58	18.63	19.21	-116.87	183.01	145.73	37.28	4.909	0			
7,600.00	7,586.76	7,601.51	7,587.20	18.81	19.47	-115.41	185.30	147.51	37.79	4.903	0			
7,700.00	7,686.72	7,701.53	7,686.95	19.00	19.67	-114.01	187.26	149.03	38.23	4.899	0			
7,800.00	7,786.69	7,801.61	7,786.82	19.18	19.87	-112.65	188.88	150.23	38.65	4.887	0			
7,900.00	7,886.68	7,901.73	7,886.78	19.36	20.06	-111.32	190.16	151.10	39.05	4.869	0			
8,000.00	7,986.68	8,001.91	7,986.84	19.52	20.26	-20.03	191.09	151.64	39.45	4.844	0			
8,100.00	8,086.68	8,102.14	8,087.00	19.70	20.44	-18.88	191.80	151.97	39.83	4.816	0			
8,200.00	8,186.68	8,202.43	8,187.24	19.90	20.62	-17.99	192.41	152.19	40.22	4.784	0			
8,300.00	8,286.68	8,302.77	8,287.55	20.09	20.80	-17.36	192.87	152.28	40.60	4.751	0			
8,400.00	8,386.68	8,403.13	8,387.91	20.29	20.97	-16.99	193.16	152.19	40.97	4.715	0			
8,500.00	8,486.68	8,503.50	8,488.28	20.49	21.13	-16.87	193.25	151.92	41.33	4.676	0			
8,600.00	8,586.68	8,603.50	8,588.28	20.69	21.31	-16.87	193.25	151.55	41.71	4.634	0			
8,700.00	8,686.68	8,703.50	8,688.28	20.88	21.50	-16.87	193.25	151.15	42.10	4.590	0			
8,800.00	8,786.68	8,803.50	8,788.28	21.08	21.70	-16.87	193.25	150.75	42.50	4.547	0			
8,900.00	8,886.68	8,903.50	8,888.28	21.28	21.89	-16.87	193.25	150.36	42.89	4.505	0			
9,000.00	8,986.68	9,003.50	8,988.28	21.48	22.09	-16.87	193.25	149.96	43.29	4.464	0			
9,100.00	9,086.68	9,103.50	9,088.28	21.68	22.28	-16.87	193.25	149.56	43.69	4.423	0			
9,200.00	9,186.68	9,203.50	9,188.28	21.88	22.48	-16.87	193.25	149.16	44.09	4.383	0			
9,300.00	9,286.68	9,281.32	9,265.97	22.08	22.65	-16.59	197.69	153.23	44.47	4.446	0			
9,400.00	9,386.68	9,350.00	9,333.36	22.29	22.86	-15.57	215.97	171.12	44.85	4.815	0			
9,500.00	9,486.68	9,415.04	9,394.84	22.49	23.11	-14.16	247.53	202.29	45.24	5.471	0			
9,590.00	9,576.68	9,467.40	9,441.90	22.67	23.35	-12.88	286.08	240.51	45.58	6.277	0			
9,600.00	9,586.68	9,475.00	9,448.51	22.69	23.38	-12.17	290.82	245.21	45.62	6.375	0			
9,625.00	9,611.65	9,486.63	9,458.51	22.74	23.45	-11.60	302.29	256.66	45.63	6.625	0			
9,650.00	9,636.52	9,500.00	9,469.82	22.79	23.52	-11.06	313.26	267.69	45.57	6.874	0			
9,675.00	9,661.23	9,513.98	9,481.44	22.84	23.60	-10.56	323.71	278.28	45.43	7.125	0			
9,700.00	9,685.71	9,525.00	9,490.43	22.89	23.66	-10.17	333.66	288.46	45.21	7.381	0			
9,725.00	9,709.89	9,541.21	9,503.38	22.94	23.76	-9.75	343.05	298.13	44.92	7.637	0			
9,750.00	9,733.70	9,550.00	9,510.26	22.99	23.82	-9.46	351.96	307.42	44.54	7.902	0			
9,775.00	9,757.09	9,568.34	9,524.29	23.05	23.94	-9.10	360.21	316.10	44.11	8.166	0			
9,800.00	9,779.98	9,581.88	9,534.34	23.10	24.04	-8.83	367.96	324.37	43.60	8.440	0			
9,825.00	9,802.31	9,600.00	9,547.40	23.15	24.18	-8.55	375.20	332.17	43.03	8.719	0			
9,850.00	9,824.02	9,608.89	9,553.62	23.20	24.25	-8.37	381.77	339.39	42.38	9.009	0			
9,875.00	9,845.06	9,625.00	9,564.60	23.26	24.38	-8.16	387.83	346.14	41.69	9.304	0			
9,900.00	9,865.36	9,635.84	9,571.77	23.32	24.47	-8.01	393.28	352.35	40.93	9.609	0			
9,925.00	9,884.86	9,650.00	9,580.84	23.38	24.60	-7.86	398.16	358.03	40.13	9.921	0			
9,950.00	9,903.53	9,662.75	9,588.73	23.45	24.72	-7.73	402.45	363.16	39.29	10.242	0			
9,975.00	9,921.30	9,675.00	9,596.06	23.52	24.84	-7.63	406.16	367.74	38.42	10.571	0			
10,000.00	9,938.12	9,689.62	9,604.47	23.61	24.99	-7.53	409.26	371.73	37.53	10.905	0			
10,025.00	9,953.95	9,700.00	9,610.21	23.70	25.10	-7.46	411.80	375.18	36.61	11.247	0			
10,050.00	9,968.75	9,716.47	9,618.95	23.80	25.28	-7.40	413.69	377.98	35.70	11.586	0			
10,075.00	9,982.48	9,725.00	9,623.28	23.92	25.37	-7.36	415.05	380.27	34.78	11.934	0			
10,100.00	9,995.09	9,743.31	9,632.12	24.06	25.59	-7.32	415.71	381.82	33.90	12.264	0			
10,125.00	10,006.55	9,756.72	9,638.21	24.22	25.76	-7.31	415.82	382.80	33.03	12.590	0			
10,150.00	10,016.84	9,775.00	9,645.96	24.40	25.99	-7.30	415.38	383.17	32.21	12.896	0			
10,175.00	10,025.92	9,783.56	9,649.37	24.61	26.11	-7.32	414.24	382.82	31.42	13.183	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risk Separation Factor	Probability of Collision	
10,200.00	10,033.77	9,800.00	9,655.53	24.84	26.33	-7.35	412.56	381.85	30.72	13.431	0		
10,225.00	10,040.36	9,810.40	9,659.15	25.10	26.48	-7.40	410.25	380.17	30.08	13.640	0		
10,250.00	10,045.69	9,825.00	9,663.88	25.39	26.69	-7.46	407.36	377.82	29.54	13.792	0		
10,275.00	10,049.73	9,837.27	9,667.52	25.70	26.88	-7.53	403.87	374.78	29.09	13.882	0		
10,300.00	10,052.47	9,850.00	9,670.97	26.03	27.07	-7.63	399.79	371.03	28.76	13.900	0		
10,325.00	10,053.91	9,864.16	9,674.44	26.39	27.30	-7.74	395.12	366.57	28.55	13.838	0		
10,338.67	10,054.15	9,875.00	9,676.81	26.59	27.47	-7.82	392.35	363.85	28.50	13.768	0		
10,385.10	10,054.27	9,900.00	9,681.37	27.32	27.89	-7.89	383.72	355.08	28.64	13.398	0		
10,400.00	10,054.31	9,900.00	9,681.37	27.56	27.89	-7.89	381.50	352.83	28.67	13.307	0		
10,500.00	10,054.58	9,960.94	9,687.04	29.35	28.97	-7.94	372.89	343.86	29.03	12.845	0		
10,532.45	10,054.67	9,982.06	9,687.24	30.00	29.37	-7.92	372.59	343.43	29.16	12.778	0		
10,600.00	10,054.86	10,049.58	9,687.15	31.35	30.69	-7.84	372.79	343.30	29.49	12.642	0		
10,700.00	10,055.13	10,149.58	9,687.02	33.52	32.79	-7.72	373.09	343.04	30.05	12.418	0		
10,800.00	10,055.40	10,249.58	9,686.89	35.81	35.03	-7.60	373.39	342.72	30.67	12.174	0		
10,900.00	10,055.67	10,349.57	9,686.76	38.21	37.39	-7.48	373.69	342.33	31.36	11.914	0		
11,000.00	10,055.94	10,449.57	9,686.63	40.70	39.84	-7.37	374.00	341.88	32.12	11.644	0		
11,100.00	10,056.21	10,549.57	9,686.50	43.26	42.36	-7.25	374.30	341.37	32.93	11.368	0		
11,200.00	10,056.48	10,649.56	9,686.37	45.88	44.96	-7.13	374.61	340.82	33.78	11.088	0		
11,300.00	10,056.75	10,749.56	9,686.24	48.55	47.60	-7.01	374.92	340.23	34.69	10.808	0		
11,400.00	10,057.02	10,849.56	9,686.11	51.26	50.30	-6.90	375.23	339.60	35.63	10.531	0		
11,500.00	10,057.30	10,949.55	9,685.98	54.00	53.03	-6.78	375.54	338.93	36.61	10.257	0		
11,600.00	10,057.57	11,049.55	9,685.85	56.78	55.79	-6.67	375.85	338.23	37.62	9.990	0		
11,700.00	10,057.84	11,149.55	9,685.72	59.58	58.58	-6.55	376.17	337.50	38.67	9.729	0		
11,800.00	10,058.11	11,249.54	9,685.59	62.40	61.39	-6.43	376.49	336.75	39.73	9.476	0		
11,900.00	10,058.38	11,349.54	9,685.46	65.24	64.23	-6.32	376.80	335.98	40.82	9.230	0		
12,000.00	10,058.65	11,449.54	9,685.34	68.10	67.08	-6.20	377.12	335.19	41.93	8.993	0		
12,100.00	10,058.92	11,549.53	9,685.21	70.98	69.95	-6.09	377.45	334.38	43.06	8.765	0		
12,200.00	10,059.19	11,649.53	9,685.08	73.87	72.83	-5.97	377.77	333.56	44.21	8.545	0		
12,300.00	10,059.47	11,749.53	9,684.95	76.77	75.73	-5.86	378.09	332.72	45.37	8.334	0		
12,400.00	10,059.74	11,849.52	9,684.82	79.68	78.63	-5.74	378.42	331.88	46.54	8.131	0		
12,500.00	10,060.01	11,949.52	9,684.69	82.60	81.55	-5.63	378.75	331.02	47.73	7.936	0		
12,600.00	10,060.28	12,049.52	9,684.56	85.52	84.47	-5.51	379.08	330.15	48.92	7.749	0		
12,700.00	10,060.55	12,149.51	9,684.43	88.46	87.41	-5.40	379.41	329.28	50.13	7.569	0		
12,800.00	10,060.82	12,249.51	9,684.30	91.40	90.34	-5.29	379.74	328.40	51.34	7.397	0		
12,900.00	10,061.09	12,349.50	9,684.17	94.35	93.29	-5.17	380.07	327.51	52.56	7.231	0		
13,000.00	10,061.36	12,449.50	9,684.04	97.31	96.24	-5.06	380.41	326.62	53.79	7.073	0		
13,100.00	10,061.63	12,549.50	9,683.91	100.26	99.20	-4.95	380.74	325.72	55.02	6.920	0		
13,200.00	10,061.91	12,649.49	9,683.78	103.23	102.16	-4.83	381.08	324.82	56.26	6.774	0		
13,300.00	10,062.18	12,749.49	9,683.65	106.20	105.13	-4.72	381.42	323.92	57.50	6.633	0		
13,400.00	10,062.45	12,849.49	9,683.52	109.17	108.10	-4.61	381.76	323.01	58.75	6.498	0		
13,500.00	10,062.72	12,949.48	9,683.39	112.14	111.07	-4.50	382.10	322.10	60.00	6.368	0		
13,600.00	10,062.99	13,049.48	9,683.26	115.12	114.05	-4.38	382.45	321.19	61.26	6.243	0		
13,700.00	10,063.26	13,149.48	9,683.13	118.11	117.03	-4.27	382.79	320.27	62.52	6.123	0		
13,800.00	10,063.53	13,249.47	9,683.00	121.09	120.02	-4.16	383.14	319.36	63.78	6.007	0		
13,900.00	10,063.80	13,349.47	9,682.87	124.08	123.00	-4.05	383.49	318.44	65.05	5.895	0		
14,000.00	10,064.07	13,449.47	9,682.74	127.07	125.99	-3.94	383.84	317.52	66.32	5.788	0		
14,100.00	10,064.35	13,549.46	9,682.61	130.06	128.98	-3.83	384.19	316.59	67.59	5.684	0		
14,200.00	10,064.62	13,649.46	9,682.48	133.06	131.98	-3.71	384.54	315.67	68.87	5.584	0		
14,300.00	10,064.89	13,749.46	9,682.35	136.05	134.97	-3.60	384.90	314.75	70.15	5.487	0		
14,400.00	10,065.16	13,849.45	9,682.22	139.05	137.97	-3.49	385.25	313.82	71.43	5.393	0		
14,500.00	10,065.43	13,949.45	9,682.09	142.05	140.97	-3.38	385.61	312.89	72.72	5.303	0		
14,600.00	10,065.70	14,049.45	9,681.96	145.05	143.97	-3.27	385.97	311.96	74.00	5.215	0		
14,700.00	10,065.97	14,149.44	9,681.84	148.06	146.97	-3.16	386.33	311.03	75.29	5.131	0		
14,800.00	10,066.24	14,249.44	9,681.71	151.06	149.98	-3.05	386.69	310.10	76.59	5.049	0		

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
14,900.00	10,066.51	14,349.44	9,681.58	154.07	152.98	-2.94	387.05	309.16	77.88	4.970	0			
15,000.00	10,066.79	14,449.43	9,681.45	157.07	155.99	-2.83	387.41	308.23	79.18	4.893	0			
15,100.00	10,067.06	14,549.43	9,681.32	160.08	159.00	-2.72	387.78	307.29	80.49	4.818	0			
15,200.00	10,067.33	14,649.43	9,681.19	163.09	162.01	-2.62	388.15	306.35	81.79	4.745	0			
15,300.00	10,067.60	14,749.42	9,681.06	166.10	165.02	-2.51	388.51	305.41	83.10	4.675	0			
15,400.00	10,067.87	14,849.42	9,680.93	169.12	168.03	-2.40	388.88	304.47	84.41	4.607	0			
15,500.00	10,068.14	14,949.42	9,680.80	172.13	171.04	-2.29	389.25	303.52	85.73	4.540	0			
15,600.00	10,068.41	15,049.41	9,680.67	175.14	174.06	-2.18	389.63	302.58	87.05	4.476	0			
15,700.00	10,068.68	15,149.41	9,680.54	178.16	177.07	-2.07	390.00	301.63	88.37	4.413	0			
15,800.00	10,068.96	15,249.41	9,680.41	181.17	180.09	-1.97	390.38	300.67	89.70	4.352	0			
15,900.00	10,069.23	15,349.40	9,680.28	184.19	183.10	-1.86	390.75	299.72	91.03	4.292	0			
16,000.00	10,069.50	15,449.40	9,680.15	187.21	186.12	-1.75	391.13	298.76	92.37	4.234	0			
16,100.00	10,069.77	15,549.40	9,680.02	190.22	189.14	-1.64	391.51	297.80	93.71	4.178	0			
16,200.00	10,070.04	15,649.39	9,679.89	193.24	192.16	-1.54	391.89	296.84	95.05	4.123	0			
16,300.00	10,070.31	15,749.39	9,679.76	196.26	195.17	-1.43	392.27	295.87	96.40	4.069	0			
16,400.00	10,070.58	15,849.39	9,679.63	199.28	198.19	-1.32	392.66	294.90	97.76	4.017	0			
16,500.00	10,070.85	15,949.38	9,679.50	202.30	201.21	-1.22	393.04	293.92	99.12	3.965	0			
16,600.00	10,071.12	16,049.38	9,679.37	205.32	204.24	-1.11	393.43	292.95	100.48	3.915	0			
16,700.00	10,071.40	16,149.38	9,679.24	208.34	207.26	-1.01	393.81	291.96	101.85	3.867	0			
16,800.00	10,071.67	16,249.37	9,679.11	211.37	210.28	-0.90	394.20	290.98	103.23	3.819	0			
16,900.00	10,071.94	16,349.37	9,678.98	214.39	213.30	-0.79	394.59	289.99	104.61	3.772	0			
17,000.00	10,072.21	16,449.37	9,678.85	217.41	216.32	-0.69	394.98	288.99	105.99	3.727	0			
17,100.00	10,072.48	16,549.36	9,678.72	220.44	219.35	-0.58	395.38	287.99	107.39	3.682	0			
17,200.00	10,072.75	16,649.36	9,678.59	223.46	222.37	-0.48	395.77	286.99	108.78	3.638	0			
17,300.00	10,073.02	16,749.36	9,678.47	226.48	225.39	-0.37	396.17	285.98	110.19	3.595	0			
17,400.00	10,073.29	16,849.35	9,678.34	229.51	228.42	-0.27	396.56	284.96	111.60	3.553	0			
17,500.00	10,073.56	16,949.35	9,678.21	232.53	231.44	-0.17	396.96	283.94	113.02	3.512	0			
17,598.34	10,073.83	17,047.68	9,678.08	235.51	234.42	-0.06	397.35	282.93	114.42	3.473	0			
17,600.00	10,073.84	17,049.35	9,678.08	235.55	234.47	-0.06	397.36	282.92	114.44	3.472	0			
17,659.64	10,074.00	17,109.02	9,678.00	236.40	235.88	0.00	397.60	282.30	115.30	3.448	0			

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Dzurisin - Thistle Unit 156H - Wellbore #1 - Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD															Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning			
0.00	0.00	1.00	1.00	0.00	0.00	-90.38	150.06									
100.00	100.00	101.00	101.00	0.09	0.09	-90.38	150.06	149.89	0.17	861.474	0					
200.00	200.00	201.00	201.00	0.31	0.31	-90.38	150.06	149.44	0.62	240.592	0					
300.00	300.00	301.00	301.00	0.54	0.54	-90.38	150.06	148.99	1.07	139.821	0					
400.00	400.00	401.00	401.00	0.76	0.76	-90.38	150.06	148.54	1.52	98.545	0					
500.00	500.00	501.00	501.00	0.99	0.99	-90.38	150.06	148.09	1.97	76.085	0					
600.00	600.00	601.00	601.00	1.21	1.21	-90.38	150.06	147.64	2.42	61.962	0					
700.00	700.00	701.00	701.00	1.43	1.44	-90.38	150.06	147.19	2.87	52.262	0					
800.00	800.00	801.00	801.00	1.66	1.66	-90.38	150.06	146.74	3.32	45.187	0					
900.00	900.00	901.00	901.00	1.88	1.89	-90.38	150.06	146.29	3.77	39.800	0					
1,000.00	1,000.00	1,001.00	1,001.00	2.11	2.11	-90.38	150.06	145.84	4.22	35.560	0					
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.34	-90.38	150.06	145.39	4.67	32.137	0					
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	-90.38	150.06	144.94	5.12	29.315	0					
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.79	-90.38	150.06	144.49	5.57	26.948	0					
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	-90.38	150.06	144.05	6.02	24.935	0					
1,500.00	1,500.00	1,501.00	1,501.00	3.23	3.23	-90.38	150.06	143.60	6.47	23.202	0					
1,600.00	1,600.00	1,601.00	1,601.00	3.46	3.46	-90.38	150.06	143.15	6.92	21.694	0					
1,700.00	1,700.00	1,701.00	1,701.00	3.68	3.68	-90.38	150.06	142.70	7.37	20.371	0					
1,800.00	1,800.00	1,801.00	1,801.00	3.91	3.91	-90.38	150.06	142.25	7.82	19.199	0					
1,900.00	1,900.00	1,901.00	1,901.00	4.13	4.13	-90.38	150.06	141.80	8.27	18.155	0					
2,000.00	2,000.00	2,001.00	2,001.00	4.36	4.36	-90.38	150.06	141.35	8.72	17.218	0					
2,100.00	2,100.00	2,101.00	2,101.00	4.58	4.58	-90.38	150.06	140.90	9.16	16.374	0					
2,200.00	2,200.00	2,201.00	2,201.00	4.81	4.81	-90.38	150.06	140.45	9.61	15.608	0					
2,300.00	2,300.00	2,301.00	2,301.00	5.03	5.03	-90.38	150.06	140.00	10.06	14.911	0					
2,400.00	2,400.00	2,401.00	2,401.00	5.26	5.26	-90.38	150.06	139.55	10.51	14.274	0					
2,500.00	2,500.00	2,501.00	2,501.00	5.48	5.48	-90.38	150.06	139.10	10.96	13.688	0					
2,600.00	2,600.00	2,601.00	2,601.00	5.71	5.71	-90.38	150.06	138.65	11.41	13.149	0					
2,700.00	2,700.00	2,701.00	2,701.00	5.93	5.93	-90.38	150.06	138.20	11.86	12.651	0					
2,800.00	2,800.00	2,801.00	2,801.00	6.15	6.16	-90.38	150.06	137.75	12.31	12.189	0					
2,900.00	2,900.00	2,901.00	2,901.00	6.38	6.38	-90.38	150.06	137.30	12.76	11.759	0					
3,000.00	3,000.00	3,001.00	3,001.00	6.60	6.61	-90.38	150.06	136.85	13.21	11.359	0					
3,100.00	3,100.00	3,101.00	3,101.00	6.83	6.83	-90.38	150.06	136.40	13.66	10.985	0					
3,200.00	3,200.00	3,201.00	3,201.00	7.05	7.06	-90.38	150.06	135.95	14.11	10.635	0					
3,300.00	3,300.00	3,301.00	3,301.00	7.28	7.28	-90.38	150.06	135.50	14.56	10.307	0					
3,400.00	3,400.00	3,401.00	3,401.00	7.50	7.51	-90.38	150.06	135.05	15.01	9.998	0					
3,466.33	3,466.33	3,467.33	3,467.33	7.65	7.65	-90.38	150.06	134.76	15.31	9.804	0		CC			
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-90.38	150.07	134.61	15.46	9.709	0		ES			
3,600.00	3,600.00	3,598.74	3,598.74	7.94	7.94	179.79	151.69	135.81	15.88	9.553	0					
3,700.00	3,699.96	3,696.34	3,696.30	8.14	8.15	-179.75	156.53	140.26	16.27	9.619	0					
3,800.00	3,799.86	3,793.62	3,793.49	8.35	8.37	-179.03	164.62	147.95	16.67	9.877	0					
3,900.00	3,899.88	3,890.41	3,890.11	8.56	8.58	-178.14	175.94	158.89	17.05	10.316	0					
4,000.00	3,999.37	3,986.56	3,985.98	8.79	8.81	-177.15	190.52	173.08	17.44	10.925	0					
4,100.00	4,098.99	4,084.75	4,083.79	9.03	9.04	-176.18	206.94	189.09	17.85	11.594	0					
4,200.00	4,198.60	4,183.33	4,182.00	9.27	9.28	-175.34	223.43	205.17	18.26	12.234	0					
4,300.00	4,298.22	4,281.91	4,280.21	9.52	9.53	-174.62	239.96	221.28	18.68	12.846	0					
4,400.00	4,397.84	4,380.50	4,378.42	9.77	9.79	-173.99	256.52	237.42	19.10	13.431	0					
4,500.00	4,497.46	4,479.08	4,476.62	10.04	10.04	-173.44	273.10	253.58	19.52	13.991	0					
4,600.00	4,497.08	4,577.66	4,574.83	10.30	10.31	-172.95	289.71	269.77	19.94	14.526	0					
4,700.00	4,496.70	4,676.24	4,673.04	10.57	10.57	-172.51	306.34	285.97	20.37	15.039	0					
4,800.00	4,496.32	4,774.83	4,771.24	10.85	10.85	-172.12	322.98	302.19	20.80	15.529	0					
4,900.00	4,495.94	4,873.41	4,869.45	11.13	11.12	-171.76	339.64	318.41	21.23	15.999	0					
5,000.00	4,995.56	4,971.99	4,967.66	11.41	11.40	-171.44	356.31	334.65	21.66	16.450	0					
5,100.00	5,095.18	5,070.58	5,065.87	11.70	11.68	-171.15	372.98	350.89	22.09	16.882	0					
5,200.00	5,194.80	5,169.16	5,164.07	11.99	11.97	-170.89	389.67	367.14	22.53	17.297	0					

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
5,300.00	5,294.42	5,267.74	5,262.28	12.28	12.25	-170.64	406.36	383.40	22.96	17.695	0			
5,400.00	5,394.04	5,366.32	5,360.49	12.58	12.54	-170.42	423.06	399.66	23.40	18.077	0			
5,500.00	5,493.66	5,464.91	5,458.70	12.88	12.83	-170.21	439.77	415.93	23.84	18.445	0			
5,600.00	5,593.28	5,563.49	5,556.90	13.18	13.13	-170.01	456.48	432.20	24.28	18.799	0			
5,700.00	5,692.90	5,662.07	5,655.11	13.48	13.42	-169.83	473.20	448.47	24.72	19.139	0			
5,800.00	5,792.52	5,760.65	5,753.32	13.78	13.72	-169.67	489.92	464.75	25.17	19.466	0			
5,900.00	5,892.14	5,859.24	5,851.53	14.09	14.02	-169.51	506.64	481.03	25.61	19.782	0			
6,000.00	5,991.76	5,957.82	5,949.73	14.40	14.33	-169.36	523.37	497.31	26.06	20.086	0			
6,100.00	6,091.37	6,056.40	6,047.94	14.71	14.63	-169.23	540.10	513.60	26.50	20.379	0			
6,200.00	6,190.99	6,154.98	6,146.15	15.02	14.93	-169.10	556.83	529.88	26.95	20.662	0			
6,300.00	6,290.61	6,253.57	6,244.36	15.34	15.24	-168.98	573.57	546.17	27.40	20.935	0			
6,400.00	6,390.23	6,352.15	6,342.56	15.65	15.55	-168.86	590.31	562.46	27.85	21.199	0			
6,500.00	6,489.85	6,450.73	6,440.77	15.97	15.86	-168.75	607.05	578.75	28.30	21.454	0			
6,600.00	6,589.47	6,549.31	6,538.98	16.29	16.17	-168.65	623.79	595.04	28.75	21.700	0			
6,700.00	6,689.09	6,647.90	6,637.19	16.61	16.48	-168.56	640.53	611.34	29.20	21.938	0			
6,800.00	6,788.71	6,746.48	6,735.39	16.93	16.79	-168.46	657.28	627.63	29.65	22.169	0			
6,900.00	6,888.33	6,845.06	6,833.60	17.25	17.10	-168.38	674.03	643.93	30.10	22.392	0			
7,000.00	6,987.95	6,943.64	6,931.81	17.57	17.42	-168.29	690.78	660.22	30.55	22.608	0			
7,100.00	7,087.61	7,042.30	7,030.08	17.84	17.73	-168.22	707.10	676.10	31.01	22.803	0			
7,200.00	7,187.33	7,141.08	7,128.49	18.04	18.05	-168.14	722.59	691.14	31.45	22.977	0			
7,300.00	7,287.12	7,239.99	7,227.03	18.24	18.37	-168.05	737.24	705.35	31.89	23.120	0			
7,400.00	7,386.96	7,339.02	7,325.68	18.43	18.69	-167.95	751.04	718.72	32.32	23.234	0			
7,500.00	7,486.84	7,438.17	7,424.45	18.63	19.00	-167.83	764.00	731.24	32.76	23.321	0			
7,600.00	7,586.76	7,537.41	7,523.32	18.81	19.33	-167.71	776.12	742.92	33.19	23.381	0			
7,700.00	7,686.72	7,636.76	7,622.28	19.00	19.65	-167.58	787.40	753.77	33.63	23.416	0			
7,800.00	7,786.69	7,736.19	7,721.33	19.18	19.97	-167.43	797.83	763.77	34.06	23.426	0			
7,900.00	7,886.68	7,835.70	7,820.47	19.36	20.29	-167.28	807.42	772.94	34.49	23.413	0			
8,000.00	7,986.68	7,935.28	7,919.67	19.52	20.62	-77.11	816.18	781.27	34.91	23.382	0			
8,100.00	8,086.68	8,037.48	8,021.49	19.70	20.93	-76.93	824.46	789.12	35.34	23.331	0			
8,200.00	8,186.68	8,144.58	8,128.25	19.90	21.18	-76.76	832.04	796.27	35.77	23.262	0			
8,300.00	8,286.68	8,251.83	8,235.23	20.09	21.40	-76.61	838.74	802.56	36.19	23.179	0			
8,400.00	8,386.68	8,359.20	8,342.41	20.29	21.61	-76.49	844.55	807.95	36.60	23.073	0			
8,500.00	8,486.68	8,466.69	8,449.76	20.49	21.81	-76.38	849.46	812.44	37.02	22.946	0			
8,600.00	8,586.68	8,574.28	8,557.25	20.69	22.01	-76.30	853.47	816.04	37.44	22.798	0			
8,700.00	8,686.68	8,681.94	8,664.86	20.88	22.20	-76.23	856.59	818.74	37.85	22.630	0			
8,800.00	8,786.68	8,789.65	8,772.54	21.08	22.39	-76.18	858.80	820.54	38.27	22.443	0			
8,900.00	8,886.68	8,897.41	8,880.28	21.28	22.57	-76.16	860.12	821.43	38.68	22.236	0			
9,000.00	8,986.68	9,004.81	8,987.68	21.48	22.74	-76.15	860.52	821.43	39.09	22.012	0			
9,100.00	9,086.68	9,104.81	9,087.68	21.68	22.92	-76.15	860.52	821.01	39.51	21.780	0			
9,200.00	9,186.68	9,204.81	9,187.68	21.88	23.11	-76.15	860.52	820.58	39.94	21.544	0			
9,300.00	9,286.68	9,275.00	9,257.72	22.08	23.27	-75.91	862.01	821.68	40.32	21.378	0			
9,400.00	9,386.68	9,342.23	9,323.61	22.29	23.48	-75.07	867.32	826.59	40.73	21.297	0			
9,500.00	9,486.68	9,400.00	9,378.28	22.49	23.70	-73.89	877.01	835.88	41.13	21.324	0			
9,590.00	9,576.68	9,450.00	9,423.50	22.67	23.94	-72.56	890.05	848.54	41.51	21.444	0			
9,600.00	9,586.68	9,458.98	9,431.38	22.69	23.99	-71.71	891.73	850.16	41.57	21.453	0			
9,625.00	9,611.65	9,475.00	9,445.22	22.74	24.08	-70.77	895.93	854.25	41.68	21.496	0			
9,650.00	9,636.52	9,485.37	9,454.03	22.79	24.14	-70.03	900.04	858.27	41.77	21.549	0			
9,675.00	9,661.23	9,500.00	9,466.25	22.84	24.22	-69.21	904.06	862.19	41.86	21.595	0			
9,700.00	9,685.71	9,511.69	9,475.83	22.89	24.30	-68.49	907.96	866.01	41.95	21.645	0			
9,725.00	9,709.89	9,525.00	9,486.55	22.94	24.38	-67.78	911.73	869.70	42.03	21.693	0			
9,750.00	9,733.70	9,537.94	9,496.75	22.99	24.47	-67.11	915.34	873.24	42.10	21.740	0			
9,775.00	9,757.09	9,550.00	9,506.06	23.05	24.55	-66.50	918.78	876.62	42.17	21.790	0			
9,800.00	9,779.98	9,564.15	9,516.73	23.10	24.66	-65.90	922.04	879.80	42.24	21.830	0			
9,825.00	9,802.31	9,575.00	9,524.72	23.15	24.74	-65.40	925.09	882.81	42.28	21.878	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 156H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
9,850.00	9,824.02	9,590.32	9,535.72	23.20	24.86	-64.87	927.92	885.56	42.36	21.908	0			
9,875.00	9,845.06	9,600.00	9,542.49	23.26	24.94	-64.46	930.53	888.14	42.39	21.950	0			
9,900.00	9,865.36	9,616.46	9,553.68	23.32	25.08	-64.02	932.89	890.41	42.48	21.962	0			
9,925.00	9,884.86	9,625.00	9,559.31	23.38	25.16	-63.70	935.02	892.50	42.52	21.991	0			
9,950.00	9,903.53	9,642.58	9,570.55	23.45	25.33	-63.36	936.85	894.22	42.63	21.976	0			
9,975.00	9,921.30	9,650.00	9,575.15	23.52	25.40	-63.13	938.47	895.79	42.69	21.985	0			
10,000.00	9,938.12	9,668.67	9,586.30	23.61	25.59	-62.88	939.76	896.91	42.85	21.932	0			
10,025.00	9,953.95	9,681.72	9,593.74	23.70	25.73	-62.72	940.80	897.80	42.99	21.883	0			
10,050.00	9,968.75	9,700.00	9,603.67	23.80	25.93	-62.59	941.58	898.37	43.21	21.790	0			
10,075.00	9,982.48	9,707.80	9,607.73	23.92	26.02	-62.53	942.02	898.65	43.37	21.720	0			
10,100.00	9,995.09	9,725.00	9,616.28	24.06	26.22	-62.52	942.23	898.57	43.66	21.581	0			
10,125.00	10,006.55	9,733.88	9,620.49	24.22	26.33	-62.54	942.11	898.20	43.90	21.459	0			
10,150.00	10,016.84	9,750.00	9,627.75	24.40	26.54	-62.63	941.73	897.46	44.27	21.272	0			
10,175.00	10,025.92	9,759.97	9,631.99	24.61	26.67	-62.74	941.05	896.43	44.61	21.093	0			
10,200.00	10,033.77	9,775.00	9,638.03	24.84	26.87	-62.93	940.10	895.03	45.07	20.859	0			
10,225.00	10,040.36	9,786.06	9,642.20	25.10	27.03	-63.14	938.86	893.34	45.52	20.625	0			
10,250.00	10,045.69	9,800.00	9,647.11	25.39	27.23	-63.41	937.36	891.30	46.06	20.350	0			
10,275.00	10,049.73	9,812.17	9,651.09	25.70	27.41	-63.72	935.60	888.97	46.63	20.064	0			
10,300.00	10,052.47	9,825.00	9,654.96	26.03	27.60	-64.08	933.58	886.32	47.25	19.756	0			
10,325.00	10,053.91	9,838.31	9,658.63	26.39	27.81	-64.49	931.31	883.37	47.94	19.428	0			
10,338.67	10,054.15	9,850.00	9,661.56	26.59	28.00	-64.79	929.99	881.57	48.41	19.209	0			
10,385.10	10,054.27	9,875.00	9,666.88	27.32	28.41	-65.09	925.87	876.27	49.59	18.670	0			
10,400.00	10,054.31	9,875.00	9,666.88	27.56	28.41	-65.09	924.76	874.94	49.82	18.561	0			
10,500.00	10,054.58	9,932.81	9,674.26	29.35	29.43	-65.51	920.28	867.67	52.62	17.491	0			
10,541.70	10,054.70	9,955.98	9,675.26	30.18	29.85	-65.57	919.86	866.04	53.82	17.091	0			
10,600.00	10,054.86	10,006.00	9,675.23	31.35	30.81	-65.57	920.30	864.47	55.83	16.484	0			
10,700.00	10,055.13	10,106.00	9,674.94	33.52	32.86	-65.56	921.20	861.41	59.79	15.407	0			
10,800.00	10,055.40	10,205.99	9,674.66	35.81	35.07	-65.54	922.10	858.12	63.99	14.411	0			
10,900.00	10,055.67	10,305.99	9,674.37	38.21	37.39	-65.53	923.00	854.63	68.38	13.499	0			
11,000.00	10,055.94	10,405.98	9,674.08	40.70	39.81	-65.52	923.90	850.98	72.93	12.669	0			
11,100.00	10,056.21	10,505.98	9,673.80	43.26	42.32	-65.51	924.80	847.20	77.61	11.916	0			
11,200.00	10,056.48	10,605.97	9,673.51	45.88	44.89	-65.49	925.70	843.31	82.40	11.235	0			
11,300.00	10,056.75	10,705.97	9,673.22	48.55	47.52	-65.48	926.60	839.33	87.28	10.617	0			
11,400.00	10,057.02	10,805.97	9,672.94	51.26	50.20	-65.47	927.50	835.27	92.23	10.056	0			
11,500.00	10,057.30	10,905.96	9,672.65	54.00	52.92	-65.46	928.40	831.15	97.25	9.547	0			
11,600.00	10,057.57	11,005.96	9,672.37	56.78	55.67	-65.44	929.30	826.98	102.32	9.082	0			
11,700.00	10,057.84	11,105.95	9,672.08	59.58	58.45	-65.43	930.20	822.76	107.44	8.658	0			
11,800.00	10,058.11	11,205.95	9,671.79	62.40	61.25	-65.42	931.10	818.50	112.61	8.269	0			
11,900.00	10,058.38	11,305.94	9,671.51	65.24	64.08	-65.41	932.00	814.20	117.80	7.912	0			
12,000.00	10,058.65	11,405.94	9,671.22	68.10	66.92	-65.39	932.90	809.88	123.03	7.583	0			
12,100.00	10,058.92	11,505.94	9,670.93	70.98	69.79	-65.38	933.80	805.53	128.28	7.280	0			
12,200.00	10,059.19	11,605.93	9,670.65	73.87	72.66	-65.37	934.71	801.15	133.55	6.999	0			
12,300.00	10,059.47	11,705.93	9,670.36	76.77	75.55	-65.36	935.61	796.76	138.85	6.738	0			
12,400.00	10,059.74	11,805.92	9,670.08	79.68	78.45	-65.35	936.51	792.34	144.16	6.496	0			
12,500.00	10,060.01	11,905.92	9,669.79	82.60	81.36	-65.33	937.41	787.92	149.49	6.271	0			
12,600.00	10,060.28	12,005.91	9,669.50	85.52	84.28	-65.32	938.31	783.47	154.83	6.060	0			
12,700.00	10,060.55	12,105.91	9,669.22	88.46	87.21	-65.31	939.21	779.02	160.19	5.863	0			
12,800.00	10,060.82	12,205.91	9,668.93	91.40	90.15	-65.30	940.11	774.55	165.56	5.678	0			
12,900.00	10,061.09	12,305.90	9,668.64	94.35	93.09	-65.28	941.01	770.07	170.94	5.505	0			
13,000.00	10,061.36	12,405.90	9,668.36	97.31	96.04	-65.27	941.91	765.59	176.32	5.342	0			
13,100.00	10,061.63	12,505.89	9,668.07	100.26	98.99	-65.26	942.81	761.09	181.72	5.188	0			
13,200.00	10,061.91	12,605.89	9,667.79	103.23	101.95	-65.25	943.71	756.59	187.12	5.043	0			
13,300.00	10,062.18	12,705.88	9,667.50	106.20	104.92	-65.24	944.61	752.08	192.53	4.906	0			
13,400.00	10,062.45	12,805.88	9,667.21	109.17	107.88	-65.22	945.51	747.57	197.95	4.777	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference														
Measured	Vertical	Measured	Vertical	Semi Major Axis		Distance								
Depth	Depth	Depth	Depth	Reference	Offset	Highside	Between	Between	Minimum	Separation	Riskd	Probability		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	Toolface	Centres	Ellipses	Separation	Factor	Separation	of Collision	Warning	
13,500.00	10,062.72	12,905.88	9,666.93	112.14	110.86	-65.21	946.41	743.05	203.37	4.654	0			
13,600.00	10,062.99	13,005.87	9,666.64	115.12	113.83	-65.20	947.32	738.52	208.79	4.537	0			
13,700.00	10,063.26	13,105.87	9,666.36	118.11	116.81	-65.19	948.22	733.99	214.23	4.426	0			
13,800.00	10,063.53	13,205.86	9,666.07	121.09	119.79	-65.18	949.12	729.46	219.66	4.321	0			
13,900.00	10,063.80	13,305.86	9,665.78	124.08	122.78	-65.16	950.02	724.92	225.10	4.220	0			
14,000.00	10,064.07	13,405.85	9,665.50	127.07	125.77	-65.15	950.92	720.38	230.54	4.125	0			
14,100.00	10,064.35	13,505.85	9,665.21	130.06	128.76	-65.14	951.82	715.83	235.99	4.033	0			
14,200.00	10,064.62	13,605.85	9,664.92	133.06	131.75	-65.13	952.72	711.29	241.44	3.946	0			
14,300.00	10,064.89	13,705.84	9,664.64	136.05	134.74	-65.12	953.62	706.74	246.89	3.863	0			
14,400.00	10,065.16	13,805.84	9,664.35	139.05	137.74	-65.11	954.52	702.18	252.34	3.783	0			
14,500.00	10,065.43	13,905.83	9,664.07	142.05	140.74	-65.09	955.43	697.63	257.80	3.706	0			
14,600.00	10,065.70	14,005.83	9,663.78	145.05	143.74	-65.08	956.33	693.07	263.25	3.633	0			
14,700.00	10,065.97	14,105.82	9,663.49	148.06	146.74	-65.07	957.23	688.51	268.71	3.562	0			
14,800.00	10,066.24	14,205.82	9,663.21	151.06	149.74	-65.06	958.13	683.96	274.17	3.495	0			
14,900.00	10,066.51	14,305.82	9,662.92	154.07	152.75	-65.05	959.03	679.39	279.64	3.430	0			
15,000.00	10,066.79	14,405.81	9,662.63	157.07	155.75	-65.04	959.93	674.83	285.10	3.367	0			
15,100.00	10,067.06	14,505.81	9,662.35	160.08	158.76	-65.02	960.83	670.27	290.57	3.307	0			
15,200.00	10,067.33	14,605.80	9,662.06	163.09	161.77	-65.01	961.74	665.70	296.03	3.249	0			
15,300.00	10,067.60	14,705.80	9,661.78	166.10	164.78	-65.00	962.64	661.14	301.50	3.193	0			
15,400.00	10,067.87	14,805.80	9,661.49	169.12	167.79	-64.99	963.54	656.57	306.97	3.139	0			
15,500.00	10,068.14	14,905.79	9,661.20	172.13	170.80	-64.98	964.44	652.00	312.44	3.087	0			
15,600.00	10,068.41	15,005.79	9,660.92	175.14	173.81	-64.97	965.34	647.44	317.91	3.037	0			
15,700.00	10,068.68	15,105.78	9,660.63	178.16	176.83	-64.95	966.25	642.87	323.38	2.988	0			
15,800.00	10,068.96	15,205.78	9,660.35	181.17	179.84	-64.94	967.15	638.30	328.85	2.941	0			
15,900.00	10,069.23	15,305.77	9,660.06	184.19	182.86	-64.93	968.05	633.73	334.32	2.896	0			
16,000.00	10,069.50	15,405.77	9,659.77	187.21	185.87	-64.92	968.95	629.16	339.79	2.852	0			
16,100.00	10,069.77	15,505.77	9,659.49	190.22	188.89	-64.91	969.85	624.59	345.26	2.809	0			
16,200.00	10,070.04	15,605.76	9,659.20	193.24	191.91	-64.90	970.75	620.02	350.74	2.768	0			
16,300.00	10,070.31	15,705.76	9,658.91	196.26	194.92	-64.89	971.66	615.45	356.21	2.728	0			
16,400.00	10,070.58	15,805.75	9,658.63	199.28	197.94	-64.87	972.56	610.88	361.68	2.689	0			
16,500.00	10,070.85	15,905.75	9,658.34	202.30	200.96	-64.86	973.46	606.30	367.16	2.651	0			
16,600.00	10,071.12	16,005.74	9,658.06	205.32	203.98	-64.85	974.36	601.73	372.63	2.615	0			
16,700.00	10,071.40	16,105.74	9,657.77	208.34	207.00	-64.84	975.27	597.16	378.10	2.579	0			
16,800.00	10,071.67	16,205.74	9,657.48	211.37	210.03	-64.83	976.17	592.59	383.58	2.545	0			
16,900.00	10,071.94	16,305.73	9,657.20	214.39	213.05	-64.82	977.07	588.02	389.05	2.511	0			
17,000.00	10,072.21	16,405.73	9,656.91	217.41	216.07	-64.81	977.97	583.45	394.52	2.479	0			
17,100.00	10,072.48	16,505.72	9,656.62	220.44	219.09	-64.80	978.87	578.88	400.00	2.447	0			
17,200.00	10,072.75	16,605.72	9,656.34	223.46	222.12	-64.78	979.78	574.31	405.47	2.416	0			
17,300.00	10,073.02	16,705.71	9,656.05	226.48	225.14	-64.77	980.68	569.74	410.94	2.386	0			
17,400.00	10,073.29	16,805.71	9,655.77	229.51	228.16	-64.76	981.58	565.17	416.42	2.357	0			
17,500.00	10,073.56	16,905.71	9,655.48	232.53	231.19	-64.75	982.48	560.60	421.89	2.329	0			
17,598.34	10,073.83	17,004.04	9,655.20	235.51	234.16	-64.74	983.37	556.10	427.27	2.302	0			
17,600.00	10,073.84	17,005.70	9,655.19	235.55	234.21	-64.74	983.39	556.04	427.35	2.301	0			
17,659.64	10,074.00	17,065.30	9,655.02	236.40	235.62	-64.73	983.93	554.53	429.40	2.291	0		SF	

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance				Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)						
0.00	0.00	0.80	0.80	0.00	0.00	-90.37	100.03					0		
100.00	100.00	100.80	100.80	0.09	0.09	-90.37	100.03	99.86	0.17	575.744	0			
200.00	200.00	200.80	200.80	0.31	0.31	-90.37	100.03	99.41	0.62	160.494	0			
300.00	300.00	300.80	300.80	0.54	0.54	-90.37	100.03	98.96	1.07	93.243	0			
400.00	400.00	400.80	400.80	0.76	0.76	-90.37	100.03	98.51	1.52	65.710	0			
500.00	500.00	500.80	500.80	0.99	0.99	-90.37	100.03	98.06	1.97	50.730	0			
600.00	600.00	600.80	600.80	1.21	1.21	-90.37	100.03	97.61	2.42	41.312	0			
700.00	700.00	700.80	700.80	1.43	1.44	-90.37	100.03	97.16	2.87	34.843	0			
800.00	800.00	800.80	800.80	1.66	1.66	-90.37	100.03	96.71	3.32	30.126	0			
900.00	900.00	900.80	900.80	1.88	1.89	-90.37	100.03	96.26	3.77	26.534	0			
1,000.00	1,000.00	1,000.80	1,000.80	2.11	2.11	-90.37	100.03	95.81	4.22	23.707	0			
1,100.00	1,100.00	1,100.80	1,100.80	2.33	2.34	-90.37	100.03	95.36	4.67	21.424	0			
1,200.00	1,200.00	1,200.80	1,200.80	2.56	2.56	-90.37	100.03	94.91	5.12	19.543	0			
1,300.00	1,300.00	1,300.80	1,300.80	2.78	2.78	-90.37	100.03	94.46	5.57	17.965	0			
1,400.00	1,400.00	1,400.80	1,400.80	3.01	3.01	-90.37	100.03	94.01	6.02	16.623	0			
1,500.00	1,500.00	1,500.80	1,500.80	3.23	3.23	-90.37	100.03	93.57	6.47	15.468	0			
1,600.00	1,600.00	1,600.80	1,600.80	3.46	3.46	-90.37	100.03	93.12	6.92	14.462	0			
1,700.00	1,700.00	1,700.80	1,700.80	3.68	3.68	-90.37	100.03	92.67	7.37	13.580	0			
1,800.00	1,800.00	1,800.80	1,800.80	3.91	3.91	-90.37	100.03	92.22	7.82	12.799	0			
1,900.00	1,900.00	1,900.80	1,900.80	4.13	4.13	-90.37	100.03	91.77	8.27	12.103	0			
2,000.00	2,000.00	2,000.80	2,000.80	4.36	4.36	-90.37	100.03	91.32	8.71	11.478	0			
2,100.00	2,100.00	2,100.80	2,100.80	4.58	4.58	-90.37	100.03	90.87	9.16	10.915	0			
2,200.00	2,200.00	2,200.80	2,200.80	4.81	4.81	-90.37	100.03	90.42	9.61	10.405	0			
2,300.00	2,300.00	2,300.80	2,300.80	5.03	5.03	-90.37	100.03	89.97	10.06	9.940	0			
2,400.00	2,400.00	2,400.80	2,400.80	5.26	5.26	-90.37	100.03	89.52	10.51	9.515	0			
2,500.00	2,500.00	2,500.80	2,500.80	5.48	5.48	-90.37	100.03	89.07	10.96	9.125	0			
2,600.00	2,600.00	2,600.80	2,600.80	5.71	5.71	-90.37	100.03	88.62	11.41	8.766	0			
2,700.00	2,700.00	2,700.80	2,700.80	5.93	5.93	-90.37	100.03	88.17	11.86	8.433	0			
2,800.00	2,800.00	2,800.80	2,800.80	6.15	6.16	-90.37	100.03	87.72	12.31	8.125	0			
2,900.00	2,900.00	2,900.80	2,900.80	6.38	6.38	-90.37	100.03	87.27	12.76	7.839	0			
3,000.00	3,000.00	3,000.80	3,000.80	6.60	6.61	-90.37	100.03	86.82	13.21	7.572	0			
3,100.00	3,100.00	3,100.80	3,100.80	6.83	6.83	-90.37	100.03	86.37	13.66	7.323	0			
3,200.00	3,200.00	3,200.80	3,200.80	7.05	7.06	-90.37	100.03	85.92	14.11	7.090	0			
3,300.00	3,300.00	3,300.80	3,300.80	7.28	7.28	-90.37	100.03	85.47	14.56	6.871	0			
3,400.00	3,400.00	3,400.80	3,400.80	7.50	7.51	-90.37	100.03	85.02	15.01	6.665	0			
3,466.40	3,466.40	3,467.20	3,467.20	7.65	7.65	-90.37	100.03	84.73	15.31	6.535	0			CC
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-90.37	100.04	84.58	15.46	6.472	0			ES
3,600.00	3,600.00	3,599.06	3,599.06	7.94	7.94	179.55	101.76	85.89	15.87	6.412	0			
3,700.00	3,699.96	3,697.17	3,697.13	8.14	8.13	179.33	106.93	90.68	16.25	6.581	0			
3,800.00	3,799.86	3,794.92	3,794.79	8.35	8.33	179.02	115.52	98.90	16.63	6.948	0			
3,900.00	3,899.68	3,892.16	3,891.85	8.56	8.53	178.65	127.53	110.53	17.00	7.501	0			
4,000.00	3,999.37	3,988.71	3,988.12	8.79	8.74	178.26	142.92	125.55	17.37	8.227	0			
4,100.00	4,098.99	4,086.92	4,085.96	9.03	8.97	177.91	160.18	142.42	17.77	9.016	0			
4,200.00	4,198.60	4,185.41	4,184.07	9.27	9.20	177.63	177.46	159.30	18.17	9.769	0			
4,300.00	4,298.22	4,283.91	4,282.19	9.52	9.45	177.39	194.74	176.18	18.57	10.488	0			
4,400.00	4,397.84	4,382.40	4,380.31	9.77	9.69	177.19	212.03	193.06	18.97	11.175	0			
4,500.00	4,497.46	4,480.89	4,478.43	10.04	9.95	177.03	229.32	209.94	19.38	11.833	0			
4,600.00	4,497.08	4,579.38	4,576.54	10.30	10.21	176.88	246.61	226.82	19.79	12.461	0			
4,700.00	4,496.70	4,677.88	4,674.66	10.57	10.47	176.76	263.90	243.70	20.20	13.063	0			
4,800.00	4,496.32	4,776.37	4,772.78	10.85	10.74	176.65	281.19	260.57	20.62	13.638	0			
4,900.00	4,495.94	4,874.86	4,870.90	11.13	11.01	176.55	298.48	277.45	21.03	14.190	0			
5,000.00	4,495.56	4,973.35	4,969.01	11.41	11.29	176.47	315.78	294.32	21.45	14.719	0			
5,100.00	5,095.18	5,071.85	5,067.13	11.70	11.57	176.39	333.07	311.20	21.87	15.227	0			
5,200.00	5,194.80	5,170.34	5,165.25	11.99	11.85	176.32	350.36	328.07	22.30	15.714	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
5,300.00	5,294.42	5,268.83	5,263.37	12.28	12.14	176.26	367.66	344.94	22.72	16.182	0			
5,400.00	5,394.04	5,367.32	5,361.48	12.58	12.43	176.20	384.95	361.81	23.15	16.631	0			
5,500.00	5,493.66	5,465.81	5,459.60	12.88	12.72	176.15	402.25	378.68	23.57	17.064	0			
5,600.00	5,593.28	5,564.31	5,557.72	13.18	13.01	176.10	419.55	395.54	24.00	17.479	0			
5,700.00	5,692.90	5,662.80	5,655.84	13.48	13.31	176.05	436.84	412.41	24.43	17.880	0			
5,800.00	5,792.52	5,761.29	5,753.95	13.78	13.61	176.01	454.14	429.27	24.86	18.265	0			
5,900.00	5,892.14	5,859.78	5,852.07	14.09	13.91	175.98	471.43	446.14	25.30	18.636	0			
6,000.00	5,991.76	5,958.28	5,950.19	14.40	14.22	175.94	488.73	463.00	25.73	18.994	0			
6,100.00	6,091.37	6,056.77	6,048.31	14.71	14.52	175.91	506.03	479.86	26.17	19.340	0			
6,200.00	6,190.99	6,155.26	6,146.43	15.02	14.83	175.88	523.33	496.72	26.60	19.673	0			
6,300.00	6,290.61	6,253.75	6,244.54	15.34	15.14	175.85	540.62	513.58	27.04	19.995	0			
6,400.00	6,390.23	6,352.25	6,342.66	15.65	15.45	175.82	557.92	530.44	27.48	20.306	0			
6,500.00	6,489.85	6,450.74	6,440.78	15.97	15.76	175.80	575.22	547.30	27.92	20.606	0			
6,600.00	6,589.47	6,549.23	6,538.90	16.29	16.07	175.77	592.52	564.16	28.36	20.896	0			
6,700.00	6,689.09	6,647.72	6,637.01	16.61	16.39	175.75	609.81	581.02	28.80	21.177	0			
6,800.00	6,788.71	6,746.21	6,735.13	16.93	16.70	175.73	627.11	597.87	29.24	21.449	0			
6,900.00	6,888.33	6,844.71	6,833.25	17.25	17.02	175.71	644.41	614.73	29.68	21.712	0			
7,000.00	6,987.95	6,943.20	6,931.37	17.57	17.34	175.69	661.71	631.58	30.12	21.967	0			
7,100.00	7,087.61	7,041.77	7,029.56	17.84	17.65	175.68	678.58	648.01	30.57	22.201	0			
7,200.00	7,187.33	7,140.47	7,127.89	18.04	17.97	175.66	694.59	663.59	30.99	22.412	0			
7,300.00	7,287.12	7,239.32	7,226.36	18.24	18.30	175.63	709.74	678.32	31.42	22.590	0			
7,400.00	7,386.96	7,338.29	7,324.95	18.43	18.62	175.60	724.03	692.19	31.84	22.737	0			
7,500.00	7,486.84	7,437.38	7,423.67	18.63	18.94	175.57	737.46	705.19	32.27	22.855	0			
7,600.00	7,586.76	7,536.59	7,522.50	18.81	19.27	175.53	750.03	717.34	32.69	22.943	0			
7,700.00	7,686.72	7,635.90	7,621.43	19.00	19.60	175.49	761.73	728.62	33.11	23.004	0			
7,800.00	7,786.69	7,735.31	7,720.46	19.18	19.92	175.45	772.57	739.04	33.53	23.039	0			
7,900.00	7,886.68	7,834.81	7,819.58	19.36	20.25	175.40	782.55	748.59	33.95	23.048	0			
8,000.00	7,986.68	7,934.39	7,918.78	19.52	20.58	-94.65	791.66	757.29	34.37	23.031	0			
8,100.00	8,086.68	8,036.55	8,020.56	19.70	20.90	-94.71	800.28	765.48	34.80	22.996	0			
8,200.00	8,186.68	8,143.72	8,127.40	19.90	21.15	-94.77	808.18	772.95	35.23	22.938	0			
8,300.00	8,286.68	8,251.05	8,234.46	20.09	21.36	-94.82	815.15	779.49	35.66	22.861	0			
8,400.00	8,386.68	8,358.51	8,341.72	20.29	21.57	-94.86	821.19	785.11	36.08	22.760	0			
8,500.00	8,486.68	8,466.08	8,449.15	20.49	21.78	-94.89	826.30	789.79	36.50	22.636	0			
8,600.00	8,586.68	8,573.74	8,556.72	20.69	21.98	-94.92	830.47	793.54	36.93	22.488	0			
8,700.00	8,686.68	8,681.48	8,664.40	20.88	22.18	-94.94	833.70	796.35	37.35	22.320	0			
8,800.00	8,786.68	8,789.28	8,772.17	21.08	22.36	-94.96	836.00	798.23	37.78	22.130	0			
8,900.00	8,886.68	8,897.11	8,879.99	21.28	22.55	-94.96	837.37	799.17	38.20	21.919	0			
9,000.00	8,986.68	9,004.61	8,987.48	21.48	22.72	-94.97	837.79	799.17	38.63	21.690	0			
9,100.00	9,086.68	9,104.61	9,087.48	21.68	22.90	-94.97	837.79	798.75	39.05	21.456	0			
9,200.00	9,186.68	9,204.61	9,187.48	21.88	23.08	-94.97	837.79	798.32	39.48	21.223	0			
9,300.00	9,286.68	9,304.61	9,287.48	22.08	23.27	-94.97	837.79	797.89	39.91	20.994	0			
9,400.00	9,386.68	9,404.61	9,387.48	22.29	23.46	-94.97	837.79	797.46	40.34	20.770	0			
9,500.00	9,486.68	9,504.61	9,487.48	22.49	23.65	-94.97	837.79	797.03	40.77	20.550	0			
9,590.00	9,576.68	9,595.28	9,578.16	22.67	23.82	-94.97	837.79	796.63	41.16	20.356	0			
9,600.00	9,586.68	9,606.74	9,589.61	22.69	23.84	-94.56	837.78	796.58	41.20	20.334	0			
9,625.00	9,611.65	9,635.37	9,618.18	22.74	23.89	-94.53	837.76	796.45	41.31	20.279	0			
9,650.00	9,636.52	9,663.96	9,646.54	22.79	23.94	-94.48	837.73	796.32	41.42	20.228	0			
9,675.00	9,661.23	9,692.50	9,674.59	22.84	23.99	-94.42	837.70	796.18	41.52	20.178	0			
9,700.00	9,685.71	9,720.96	9,702.20	22.89	24.03	-94.35	837.66	796.05	41.61	20.130	0			
9,725.00	9,709.89	9,749.34	9,729.28	22.94	24.07	-94.26	837.63	795.92	41.71	20.083	0			
9,750.00	9,733.70	9,777.63	9,755.71	22.99	24.11	-94.16	837.59	795.78	41.81	20.035	0			
9,775.00	9,757.09	9,805.80	9,781.41	23.05	24.15	-94.05	837.55	795.64	41.91	19.986	0			
9,800.00	9,779.98	9,833.86	9,806.27	23.10	24.18	-93.92	837.51	795.50	42.02	19.933	0			
9,825.00	9,802.31	9,861.79	9,830.22	23.15	24.22	-93.78	837.48	795.34	42.14	19.875	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risk Separation Factor	Probability of Collision		
9,850.00	9,824.02	9,889.58	9,853.18	23.20	24.25	-93.64	837.45	795.17	42.27	19.810	0			
9,875.00	9,845.06	9,917.23	9,875.08	23.26	24.29	-93.48	837.42	794.99	42.43	19.737	0			
9,900.00	9,865.36	9,944.71	9,895.85	23.32	24.33	-93.31	837.40	794.79	42.61	19.654	0			
9,925.00	9,884.86	9,972.04	9,915.44	23.38	24.37	-93.13	837.38	794.58	42.81	19.562	0			
9,950.00	9,903.53	9,999.21	9,933.80	23.45	24.41	-92.94	837.38	794.34	43.04	19.456	0			
9,952.21	9,905.13	10,001.60	9,935.36	23.46	24.41	-92.93	837.38	794.32	43.06	19.445	0			
9,975.00	9,921.30	10,026.20	9,950.88	23.52	24.46	-92.75	837.38	794.08	43.31	19.336	0			
10,000.00	9,938.12	10,053.01	9,966.66	23.61	24.51	-92.55	837.40	793.79	43.61	19.203	0			
10,025.00	9,953.95	10,079.65	9,981.10	23.70	24.58	-92.34	837.42	793.48	43.95	19.055	0			
10,050.00	9,968.75	10,106.11	9,994.19	23.80	24.65	-92.13	837.46	793.13	44.33	18.893	0			
10,075.00	9,982.48	10,132.39	10,005.91	23.92	24.74	-91.91	837.51	792.77	44.75	18.716	0			
10,100.00	9,995.09	10,158.49	10,016.25	24.06	24.85	-91.68	837.58	792.37	45.21	18.526	0			
10,125.00	10,006.55	10,184.41	10,025.21	24.22	24.98	-91.45	837.66	791.94	45.72	18.323	0			
10,150.00	10,016.84	10,210.14	10,032.79	24.40	25.13	-91.22	837.75	791.49	46.26	18.109	0			
10,175.00	10,025.92	10,235.70	10,038.99	24.61	25.32	-90.99	837.86	791.01	46.85	17.884	0			
10,200.00	10,033.77	10,261.08	10,043.83	24.84	25.53	-90.75	837.98	790.51	47.48	17.651	0			
10,225.00	10,040.36	10,286.29	10,047.32	25.10	25.78	-90.52	838.12	789.98	48.14	17.410	0			
10,250.00	10,045.69	10,311.32	10,049.48	25.39	26.05	-90.28	838.27	789.43	48.84	17.164	0			
10,275.00	10,049.73	10,336.19	10,050.33	25.70	26.35	-90.04	838.44	788.87	49.57	16.914	0			
10,300.00	10,052.47	10,361.04	10,050.38	26.03	26.62	-89.84	838.62	788.39	50.23	16.695	0			
10,325.00	10,053.91	10,385.99	10,050.43	26.39	26.91	-89.72	838.80	787.90	50.90	16.479	0			
10,338.67	10,054.15	10,399.66	10,050.46	26.59	27.07	-89.69	838.89	787.62	51.28	16.359	0			
10,385.10	10,054.27	10,446.09	10,050.55	27.32	27.77	-89.69	839.22	786.33	52.88	15.869	0			
10,400.00	10,054.31	10,460.99	10,050.58	27.56	28.01	-89.69	839.32	785.91	53.41	15.715	0			
10,500.00	10,054.58	10,560.99	10,050.78	29.35	29.77	-89.69	840.02	782.82	57.19	14.688	0			
10,600.00	10,054.86	10,660.99	10,050.98	31.35	31.74	-89.68	840.71	779.37	61.35	13.705	0			
10,700.00	10,055.13	10,760.98	10,051.18	33.52	33.89	-89.68	841.41	775.61	65.80	12.787	0			
10,800.00	10,055.40	10,860.98	10,051.38	35.81	36.17	-89.67	842.10	771.61	70.50	11.945	0			
10,900.00	10,055.67	10,960.98	10,051.57	38.21	38.56	-89.67	842.80	767.41	75.39	11.179	0			
11,000.00	10,055.94	11,060.98	10,051.77	40.70	41.04	-89.66	843.50	763.05	80.45	10.485	0			
11,100.00	10,056.21	11,160.97	10,051.97	43.26	43.60	-89.66	844.19	758.55	85.64	9.857	0			
11,200.00	10,056.48	11,260.97	10,052.17	45.88	46.21	-89.65	844.89	753.95	90.94	9.290	0			
11,300.00	10,056.75	11,360.97	10,052.37	48.55	48.87	-89.65	845.58	749.25	96.33	8.778	0			
11,400.00	10,057.02	11,460.97	10,052.57	51.26	51.58	-89.65	846.28	744.48	101.80	8.313	0			
11,500.00	10,057.30	11,560.96	10,052.76	54.00	54.32	-89.64	846.98	739.64	107.34	7.891	0			
11,600.00	10,057.57	11,660.96	10,052.96	56.78	57.09	-89.64	847.67	734.74	112.93	7.506	0			
11,700.00	10,057.84	11,760.96	10,053.16	59.58	59.89	-89.63	848.37	729.80	118.57	7.155	0			
11,800.00	10,058.11	11,860.96	10,053.36	62.40	62.71	-89.63	849.06	724.81	124.25	6.833	0			
11,900.00	10,058.38	11,960.95	10,053.56	65.24	65.55	-89.62	849.76	719.79	129.97	6.538	0			
12,000.00	10,058.65	12,060.95	10,053.76	68.10	68.40	-89.62	850.46	714.74	135.72	6.266	0			
12,100.00	10,058.92	12,160.95	10,053.96	70.98	71.28	-89.61	851.15	709.66	141.50	6.015	0			
12,200.00	10,059.19	12,260.95	10,054.15	73.87	74.16	-89.61	851.85	704.55	147.30	5.783	0			
12,300.00	10,059.47	12,360.94	10,054.35	76.77	77.06	-89.60	852.54	699.42	153.12	5.568	0			
12,400.00	10,059.74	12,460.94	10,054.55	79.68	79.97	-89.60	853.24	694.28	158.96	5.368	0			
12,500.00	10,060.01	12,560.94	10,054.75	82.60	82.88	-89.59	853.94	689.12	164.82	5.181	0			
12,600.00	10,060.28	12,660.94	10,054.95	85.52	85.81	-89.59	854.63	683.94	170.69	5.007	0			
12,700.00	10,060.55	12,760.93	10,055.15	88.46	88.74	-89.59	855.33	678.75	176.58	4.844	0			
12,800.00	10,060.82	12,860.93	10,055.34	91.40	91.68	-89.58	856.02	673.54	182.48	4.691	0			
12,900.00	10,061.09	12,960.93	10,055.54	94.35	94.63	-89.58	856.72	668.33	188.39	4.547	0			
13,000.00	10,061.36	13,060.93	10,055.74	97.31	97.58	-89.57	857.42	663.10	194.32	4.412	0			
13,100.00	10,061.63	13,160.93	10,055.94	100.26	100.54	-89.57	858.11	657.86	200.25	4.285	0			
13,200.00	10,061.91	13,260.92	10,056.14	103.23	103.50	-89.56	858.81	652.62	206.19	4.165	0			
13,300.00	10,062.18	13,360.92	10,056.34	106.20	106.47	-89.56	859.50	647.37	212.14	4.052	0			
13,400.00	10,062.45	13,460.92	10,056.53	109.17	109.44	-89.55	860.20	642.11	218.09	3.944	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risk Factor	Probability of Collision	Warning	
13,500.00	10,062.72	13,560.92	10,056.73	112.14	112.42	-89.55	860.90	636.84	224.05	3.842	0			
13,600.00	10,062.99	13,660.91	10,056.93	115.12	115.39	-89.54	861.59	631.57	230.02	3.746	0			
13,700.00	10,063.26	13,760.91	10,057.13	118.11	118.37	-89.54	862.29	626.29	235.99	3.654	0			
13,800.00	10,063.53	13,860.91	10,057.33	121.09	121.36	-89.54	862.98	621.01	241.97	3.566	0			
13,900.00	10,063.80	13,960.91	10,057.53	124.08	124.34	-89.53	863.68	615.72	247.96	3.483	0			
14,000.00	10,064.07	14,060.90	10,057.73	127.07	127.33	-89.53	864.38	610.43	253.95	3.404	0			
14,100.00	10,064.35	14,160.90	10,057.92	130.06	130.33	-89.52	865.07	605.13	259.94	3.328	0			
14,200.00	10,064.62	14,260.90	10,058.12	133.06	133.32	-89.52	865.77	599.83	265.93	3.256	0			
14,300.00	10,064.89	14,360.90	10,058.32	136.05	136.31	-89.51	866.46	594.53	271.93	3.186	0			
14,400.00	10,065.16	14,460.89	10,058.52	139.05	139.31	-89.51	867.16	589.22	277.94	3.120	0			
14,500.00	10,065.43	14,560.89	10,058.72	142.05	142.31	-89.51	867.86	583.91	283.94	3.056	0			
14,600.00	10,065.70	14,660.89	10,058.92	145.05	145.31	-89.50	868.55	578.60	289.95	2.995	0			
14,700.00	10,065.97	14,760.89	10,059.11	148.06	148.32	-89.50	869.25	573.28	295.97	2.937	0			
14,800.00	10,066.24	14,860.88	10,059.31	151.06	151.32	-89.49	869.94	567.96	301.98	2.881	0			
14,900.00	10,066.51	14,960.88	10,059.51	154.07	154.33	-89.49	870.64	562.64	308.00	2.827	0			
15,000.00	10,066.79	15,060.88	10,059.71	157.07	157.33	-89.48	871.34	557.32	314.02	2.775	0			
15,100.00	10,067.06	15,160.88	10,059.91	160.08	160.34	-89.48	872.03	551.99	320.04	2.725	0			
15,200.00	10,067.33	15,260.87	10,060.11	163.09	163.35	-89.47	872.73	546.66	326.07	2.677	0			
15,300.00	10,067.60	15,360.87	10,060.31	166.10	166.36	-89.47	873.42	541.33	332.09	2.630	0			
15,400.00	10,067.87	15,460.87	10,060.50	169.12	169.37	-89.47	874.12	536.00	338.12	2.585	0			
15,500.00	10,068.14	15,560.87	10,060.70	172.13	172.38	-89.46	874.82	530.67	344.15	2.542	0			
15,600.00	10,068.41	15,660.86	10,060.90	175.14	175.40	-89.46	875.51	525.33	350.18	2.500	0			
15,700.00	10,068.68	15,760.86	10,061.10	178.16	178.41	-89.45	876.21	519.99	356.22	2.460	0			
15,800.00	10,068.96	15,860.86	10,061.30	181.17	181.43	-89.45	876.91	514.66	362.25	2.421	0			
15,900.00	10,069.23	15,960.86	10,061.50	184.19	184.44	-89.44	877.60	509.32	368.29	2.383	0			
16,000.00	10,069.50	16,060.85	10,061.69	187.21	187.46	-89.44	878.30	503.97	374.32	2.346	0			
16,100.00	10,069.77	16,160.85	10,061.89	190.22	190.48	-89.44	878.99	498.63	380.36	2.311	0			
16,200.00	10,070.04	16,260.85	10,062.09	193.24	193.49	-89.43	879.69	493.29	386.40	2.277	0			
16,300.00	10,070.31	16,360.85	10,062.29	196.26	196.51	-89.43	880.39	487.94	392.44	2.243	0			
16,400.00	10,070.58	16,460.84	10,062.49	199.28	199.53	-89.42	881.08	482.60	398.49	2.211	0			
16,500.00	10,070.85	16,560.84	10,062.69	202.30	202.55	-89.42	881.78	477.25	404.53	2.180	0			
16,600.00	10,071.12	16,660.84	10,062.88	205.32	205.57	-89.41	882.47	471.90	410.57	2.149	0			
16,700.00	10,071.40	16,760.84	10,063.08	208.34	208.59	-89.41	883.17	466.55	416.62	2.120	0			
16,800.00	10,071.67	16,860.83	10,063.28	211.37	211.62	-89.41	883.87	461.20	422.67	2.091	0			
16,900.00	10,071.94	16,960.83	10,063.48	214.39	214.64	-89.40	884.56	455.85	428.71	2.063	0			
17,000.00	10,072.21	17,060.83	10,063.68	217.41	217.66	-89.40	885.26	450.50	434.76	2.036	0			
17,100.00	10,072.48	17,160.83	10,063.88	220.44	220.68	-89.39	885.96	445.15	440.81	2.010	0			
17,200.00	10,072.75	17,260.82	10,064.08	223.46	223.71	-89.39	886.65	439.79	446.86	1.984	0			
17,300.00	10,073.02	17,360.82	10,064.27	226.48	226.73	-89.38	887.35	434.44	452.91	1.959	0			
17,400.00	10,073.29	17,460.82	10,064.47	229.51	229.75	-89.38	888.04	429.08	458.96	1.935	0			
17,500.00	10,073.56	17,560.82	10,064.67	232.53	232.78	-89.38	888.74	423.73	465.01	1.911	0			
17,598.34	10,073.83	17,659.15	10,064.87	235.51	235.75	-89.37	889.42	418.46	470.97	1.889	0			
17,600.00	10,073.84	17,660.82	10,064.87	235.55	235.80	-89.37	889.44	418.38	471.05	1.888	0			
17,659.64	10,074.00	17,720.49	10,064.99	236.40	237.57	-89.37	889.85	416.19	473.67	1.879	0		SF	

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

Devon Energy
Anticollision Risk Report

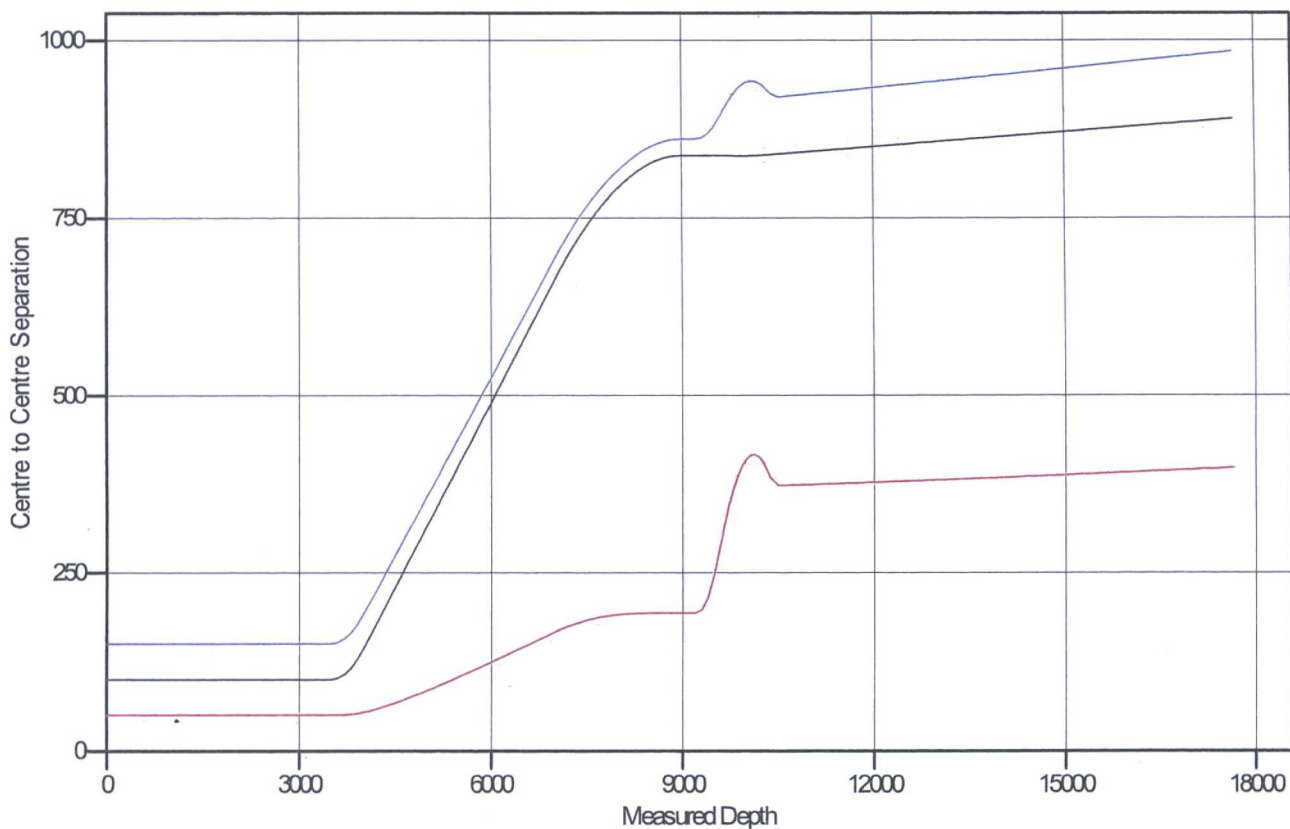
Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Reference Depths are relative to 1 @ 3673.20ft
Offset Depths are relative to Offset Datum
Central Meridian is

Coordinates are relative to: Thistle Unit 144H
Coordinate System is Flat Earth, No Conversions
Grid Convergence at Surface is: 0.00°

Ladder Plot



LEGEND

— Thistle Unit 1H, Wellbore #1, Plan 1 V0 — Thistle Unit 156H, Wellbore #1, Plan 1 V0 — Thistle Unit 145H, Wellbore #1, Plan 1 V0

Devon Energy
Anticollision Risk Report

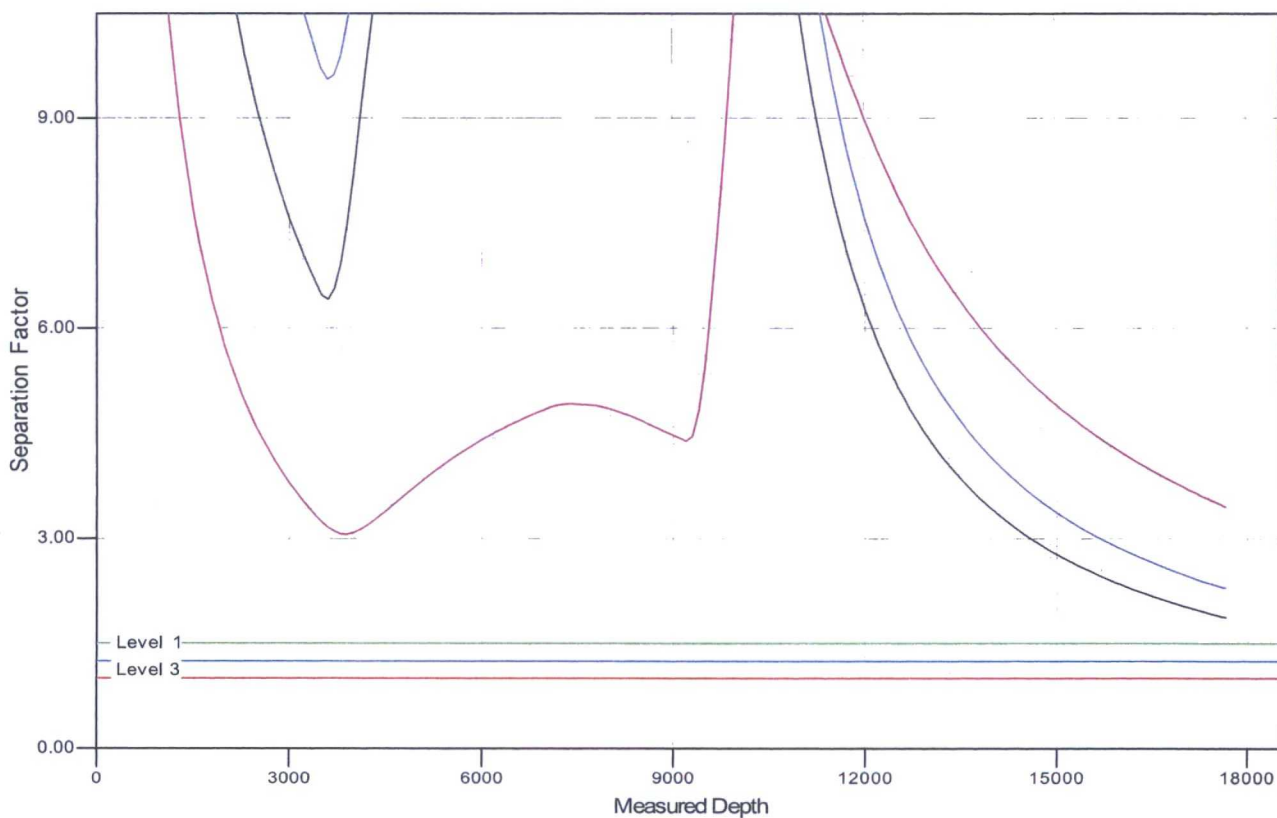
Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Reference Depths are relative to 1 @ 3673.20ft
Offset Depths are relative to Offset Datum
Central Meridian is

Coordinates are relative to: Thistle Unit 144H
Coordinate System is Flat Earth, No Conversions
Grid Convergence at Surface is: 0.00°

Separation Factor Plot



LEGEND

Thistle Unit 1H, Wellbore #1, Plan 1 V0 Thistle Unit 156H, Wellbore #1, Plan 1 V0 Thistle Unit 145H, Wellbore #1, Plan 1 V0