

WESTERN DIVISION

PBNM

Dzurisin

Thistle Unit 121H

Wellbore #1

Plan: Plan 1

Standard Planning Report

01 August, 2016

HOBBS OCD
APR 04 2017
RECEIVED

Devon Energy

Planning Report

Database: EDM r5000 US Production
 Company: WESTERN DIVISION
 Project: PBNM
 Site: Dzurisin
 Well: Thistle Unit 121H
 Wellbore: Wellbore #1
 Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
 TVD Reference: 1 @ 3746.90ft
 MD Reference: 1 @ 3746.90ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Project	PBNM		
Map System:	Flat Earth	System Datum:	Mean Sea Level
Geo Datum:	WGS 1984		
Map Zone:	No Conversions		

Site	Dzurisin		
Site Position:		Northing:	429,922.27 usft
From:	Map	Easting:	725,391.41 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	0.000000
		Longitude:	0.000000
		Grid Convergence:	

Well	Thistle Unit 121H		
Well Position	+N/-S	42,583.86 ft	Northing:
	+E/-W	51,341.82 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	0.000000
		Longitude:	0.000000
		Ground Level:	3,723.40 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	7/28/2016	0.00	0.00	0

Design	Plan 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	183.25

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	5.00	290.00	3,999.37	7.46	-20.49	1.00	1.00	0.00	290.00	
8,000.00	5.00	290.00	7,984.14	126.69	-348.09	0.00	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,982.88	141.61	-389.06	0.50	-0.50	0.00	180.00	
9,578.00	0.00	0.00	9,560.88	141.61	-389.06	0.00	0.00	0.00	0.00	
10,321.50	89.22	180.33	10,038.30	-329.35	-391.78	12.00	12.00	0.00	180.33	Thistle Unit 121H BHI
10,343.33	89.22	180.33	10,038.59	-351.17	-391.90	0.01	-0.01	0.00	179.98	
17,602.95	89.22	180.33	10,137.70	-7,610.00	-433.76	0.00	0.00	0.00	0.00	
17,625.14	89.22	180.33	10,138.00	-7,632.19	-433.89	0.01	0.01	0.00	-10.42	Thistle Unit 121H BHI

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Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	1.00	290.00	3,600.00	0.30	-0.82	-0.25	1.00	1.00	0.00
3,700.00	2.00	290.00	3,699.96	1.19	-3.28	-1.01	1.00	1.00	0.00
3,800.00	3.00	290.00	3,799.86	2.69	-7.38	-2.26	1.00	1.00	0.00
3,900.00	4.00	290.00	3,899.68	4.77	-13.12	-4.02	1.00	1.00	0.00
4,000.00	5.00	290.00	3,999.37	7.46	-20.49	-6.28	1.00	1.00	0.00
4,100.00	5.00	290.00	4,098.99	10.44	-28.68	-8.79	0.00	0.00	0.00
4,200.00	5.00	290.00	4,198.60	13.42	-36.87	-11.30	0.00	0.00	0.00
4,300.00	5.00	290.00	4,298.22	16.40	-45.06	-13.82	0.00	0.00	0.00
4,400.00	5.00	290.00	4,397.84	19.38	-53.25	-16.33	0.00	0.00	0.00
4,500.00	5.00	290.00	4,497.46	22.36	-61.44	-18.84	0.00	0.00	0.00
4,600.00	5.00	290.00	4,597.08	25.34	-69.63	-21.35	0.00	0.00	0.00
4,700.00	5.00	290.00	4,696.70	28.32	-77.82	-23.86	0.00	0.00	0.00
4,800.00	5.00	290.00	4,796.32	31.30	-86.01	-26.37	0.00	0.00	0.00
4,900.00	5.00	290.00	4,895.94	34.29	-94.20	-28.88	0.00	0.00	0.00
5,000.00	5.00	290.00	4,995.56	37.27	-102.39	-31.40	0.00	0.00	0.00
5,100.00	5.00	290.00	5,095.18	40.25	-110.58	-33.91	0.00	0.00	0.00
5,200.00	5.00	290.00	5,194.80	43.23	-118.77	-36.42	0.00	0.00	0.00
5,300.00	5.00	290.00	5,294.42	46.21	-126.96	-38.93	0.00	0.00	0.00

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5,400.00	5.00	290.00	5,394.04	49.19	-135.15	-41.44	0.00	0.00	0.00
5,500.00	5.00	290.00	5,493.66	52.17	-143.34	-43.95	0.00	0.00	0.00
5,600.00	5.00	290.00	5,593.28	55.15	-151.53	-46.46	0.00	0.00	0.00
5,700.00	5.00	290.00	5,692.90	58.13	-159.72	-48.97	0.00	0.00	0.00
5,800.00	5.00	290.00	5,792.52	61.11	-167.91	-51.49	0.00	0.00	0.00
5,900.00	5.00	290.00	5,892.14	64.09	-176.10	-54.00	0.00	0.00	0.00
6,000.00	5.00	290.00	5,991.76	67.08	-184.29	-56.51	0.00	0.00	0.00
6,100.00	5.00	290.00	6,091.37	70.06	-192.48	-59.02	0.00	0.00	0.00
6,200.00	5.00	290.00	6,190.99	73.04	-200.67	-61.53	0.00	0.00	0.00
6,300.00	5.00	290.00	6,290.61	76.02	-208.86	-64.04	0.00	0.00	0.00
6,400.00	5.00	290.00	6,390.23	79.00	-217.05	-66.55	0.00	0.00	0.00
6,500.00	5.00	290.00	6,489.85	81.98	-225.24	-69.06	0.00	0.00	0.00
6,600.00	5.00	290.00	6,589.47	84.96	-233.43	-71.58	0.00	0.00	0.00
6,700.00	5.00	290.00	6,689.09	87.94	-241.62	-74.09	0.00	0.00	0.00
6,800.00	5.00	290.00	6,788.71	90.92	-249.81	-76.60	0.00	0.00	0.00
6,900.00	5.00	290.00	6,888.33	93.90	-258.00	-79.11	0.00	0.00	0.00
7,000.00	5.00	290.00	6,987.95	96.88	-266.19	-81.62	0.00	0.00	0.00
7,100.00	5.00	290.00	7,087.57	99.86	-274.38	-84.13	0.00	0.00	0.00
7,200.00	5.00	290.00	7,187.19	102.85	-282.57	-86.64	0.00	0.00	0.00
7,300.00	5.00	290.00	7,286.81	105.83	-290.76	-89.16	0.00	0.00	0.00
7,400.00	5.00	290.00	7,386.43	108.81	-298.95	-91.67	0.00	0.00	0.00
7,500.00	5.00	290.00	7,486.05	111.79	-307.14	-94.18	0.00	0.00	0.00
7,600.00	5.00	290.00	7,585.67	114.77	-315.33	-96.69	0.00	0.00	0.00
7,700.00	5.00	290.00	7,685.29	117.75	-323.52	-99.20	0.00	0.00	0.00
7,800.00	5.00	290.00	7,784.91	120.73	-331.71	-101.71	0.00	0.00	0.00
7,900.00	5.00	290.00	7,884.53	123.71	-339.90	-104.22	0.00	0.00	0.00
8,000.00	5.00	290.00	7,984.14	126.69	-348.09	-106.73	0.00	0.00	0.00
8,100.00	4.50	290.00	8,083.80	129.53	-355.87	-109.12	0.50	-0.50	0.00
8,200.00	4.00	290.00	8,183.53	132.06	-362.83	-111.26	0.50	-0.50	0.00
8,300.00	3.50	290.00	8,283.31	134.30	-368.98	-113.14	0.50	-0.50	0.00
8,400.00	3.00	290.00	8,383.15	136.24	-374.30	-114.77	0.50	-0.50	0.00
8,500.00	2.50	290.00	8,483.03	137.88	-378.81	-116.16	0.50	-0.50	0.00
8,600.00	2.00	290.00	8,582.96	139.22	-382.50	-117.29	0.50	-0.50	0.00
8,700.00	1.50	290.00	8,682.91	140.26	-385.37	-118.17	0.50	-0.50	0.00
8,800.00	1.00	290.00	8,782.89	141.01	-387.42	-118.80	0.50	-0.50	0.00
8,900.00	0.50	290.00	8,882.88	141.46	-388.65	-119.17	0.50	-0.50	0.00
9,000.00	0.00	0.00	8,982.88	141.61	-389.06	-119.30	0.50	-0.50	0.00
9,100.00	0.00	0.00	9,082.88	141.61	-389.06	-119.30	0.00	0.00	0.00
9,200.00	0.00	0.00	9,182.88	141.61	-389.06	-119.30	0.00	0.00	0.00
9,300.00	0.00	0.00	9,282.88	141.61	-389.06	-119.30	0.00	0.00	0.00
9,400.00	0.00	0.00	9,382.88	141.61	-389.06	-119.30	0.00	0.00	0.00
9,500.00	0.00	0.00	9,482.88	141.61	-389.06	-119.30	0.00	0.00	0.00
9,578.00	0.00	0.00	9,560.88	141.61	-389.06	-119.30	0.00	0.00	0.00
9,600.00	2.64	180.33	9,582.87	141.10	-389.07	-118.79	12.00	12.00	0.00
9,625.00	5.64	180.33	9,607.80	139.30	-389.08	-116.99	12.00	12.00	0.00
9,650.00	8.64	180.33	9,632.60	136.19	-389.09	-113.89	12.00	12.00	0.00
9,675.00	11.64	180.33	9,657.21	131.79	-389.12	-109.49	12.00	12.00	0.00
9,700.00	14.64	180.33	9,681.55	126.11	-389.15	-103.82	12.00	12.00	0.00
9,725.00	17.64	180.33	9,705.56	119.16	-389.19	-96.88	12.00	12.00	0.00
9,750.00	20.64	180.33	9,729.18	110.96	-389.24	-88.69	12.00	12.00	0.00
9,775.00	23.64	180.33	9,752.33	101.54	-389.29	-79.28	12.00	12.00	0.00
9,800.00	26.64	180.33	9,774.96	90.92	-389.35	-68.68	12.00	12.00	0.00
9,825.00	29.64	180.33	9,797.01	79.13	-389.42	-56.90	12.00	12.00	0.00
9,850.00	32.64	180.33	9,818.40	66.21	-389.50	-43.99	12.00	12.00	0.00

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9,875.00	35.64	180.33	9,839.09	52.18	-389.58	-29.98	12.00	12.00	0.00
9,900.00	38.64	180.33	9,859.02	37.08	-389.66	-14.91	12.00	12.00	0.00
9,925.00	41.64	180.33	9,878.13	20.97	-389.76	1.18	12.00	12.00	0.00
9,950.00	44.64	180.33	9,896.37	3.88	-389.86	18.25	12.00	12.00	0.00
9,975.00	47.64	180.33	9,913.69	-14.15	-389.96	36.25	12.00	12.00	0.00
10,000.00	50.64	180.33	9,930.04	-33.05	-390.07	55.13	12.00	12.00	0.00
10,025.00	53.64	180.33	9,945.38	-52.79	-390.18	74.84	12.00	12.00	0.00
10,050.00	56.64	180.33	9,959.67	-73.30	-390.30	95.33	12.00	12.00	0.00
10,075.00	59.64	180.33	9,972.86	-94.53	-390.42	116.53	12.00	12.00	0.00
10,100.00	62.64	180.33	9,984.93	-116.42	-390.55	138.40	12.00	12.00	0.00
10,125.00	65.64	180.33	9,995.83	-138.91	-390.68	160.86	12.00	12.00	0.00
10,150.00	68.64	180.33	10,005.54	-161.95	-390.81	183.87	12.00	12.00	0.00
10,175.00	71.64	180.33	10,014.04	-185.46	-390.95	207.35	12.00	12.00	0.00
10,200.00	74.64	180.33	10,021.29	-209.38	-391.09	231.24	12.00	12.00	0.00
10,225.00	77.64	180.33	10,027.27	-233.65	-391.23	255.47	12.00	12.00	0.00
10,250.00	80.64	180.33	10,031.98	-258.20	-391.37	279.99	12.00	12.00	0.00
10,275.00	83.64	180.33	10,035.40	-282.96	-391.51	304.72	12.00	12.00	0.00
10,300.00	86.64	180.33	10,037.52	-307.87	-391.65	329.60	12.00	12.00	0.00
10,321.50	89.22	180.33	10,038.30	-329.35	-391.78	351.05	12.00	12.00	0.00
10,343.33	89.22	180.33	10,038.59	-351.17	-391.90	372.85	0.01	-0.01	0.00
10,400.00	89.22	180.33	10,039.37	-407.84	-392.23	429.44	0.00	0.00	0.00
10,500.00	89.22	180.33	10,040.73	-507.83	-392.81	529.30	0.00	0.00	0.00
10,600.00	89.22	180.33	10,042.10	-607.82	-393.38	629.16	0.00	0.00	0.00
10,700.00	89.22	180.33	10,043.46	-707.81	-393.96	729.03	0.00	0.00	0.00
10,800.00	89.22	180.33	10,044.83	-807.80	-394.54	828.89	0.00	0.00	0.00
10,900.00	89.22	180.33	10,046.19	-907.79	-395.11	928.75	0.00	0.00	0.00
11,000.00	89.22	180.33	10,047.56	-1,007.78	-395.69	1,028.61	0.00	0.00	0.00
11,100.00	89.22	180.33	10,048.92	-1,107.76	-396.27	1,128.47	0.00	0.00	0.00
11,200.00	89.22	180.33	10,050.29	-1,207.75	-396.84	1,228.33	0.00	0.00	0.00
11,300.00	89.22	180.33	10,051.65	-1,307.74	-397.42	1,328.19	0.00	0.00	0.00
11,400.00	89.22	180.33	10,053.02	-1,407.73	-398.00	1,428.05	0.00	0.00	0.00
11,500.00	89.22	180.33	10,054.38	-1,507.72	-398.57	1,527.91	0.00	0.00	0.00
11,600.00	89.22	180.33	10,055.75	-1,607.71	-399.15	1,627.77	0.00	0.00	0.00
11,700.00	89.22	180.33	10,057.12	-1,707.70	-399.73	1,727.63	0.00	0.00	0.00
11,800.00	89.22	180.33	10,058.48	-1,807.69	-400.30	1,827.49	0.00	0.00	0.00
11,900.00	89.22	180.33	10,059.85	-1,907.68	-400.88	1,927.35	0.00	0.00	0.00
12,000.00	89.22	180.33	10,061.21	-2,007.67	-401.46	2,027.21	0.00	0.00	0.00
12,100.00	89.22	180.33	10,062.58	-2,107.65	-402.03	2,127.07	0.00	0.00	0.00
12,200.00	89.22	180.33	10,063.94	-2,207.64	-402.61	2,226.93	0.00	0.00	0.00
12,300.00	89.22	180.33	10,065.31	-2,307.63	-403.19	2,326.79	0.00	0.00	0.00
12,400.00	89.22	180.33	10,066.67	-2,407.62	-403.76	2,426.66	0.00	0.00	0.00
12,500.00	89.22	180.33	10,068.04	-2,507.61	-404.34	2,526.52	0.00	0.00	0.00
12,600.00	89.22	180.33	10,069.40	-2,607.60	-404.92	2,626.38	0.00	0.00	0.00
12,700.00	89.22	180.33	10,070.77	-2,707.59	-405.49	2,726.24	0.00	0.00	0.00
12,800.00	89.22	180.33	10,072.13	-2,807.58	-406.07	2,826.10	0.00	0.00	0.00
12,900.00	89.22	180.33	10,073.50	-2,907.57	-406.65	2,925.96	0.00	0.00	0.00
13,000.00	89.22	180.33	10,074.86	-3,007.56	-407.22	3,025.82	0.00	0.00	0.00
13,100.00	89.22	180.33	10,076.23	-3,107.54	-407.80	3,125.68	0.00	0.00	0.00
13,200.00	89.22	180.33	10,077.59	-3,207.53	-408.38	3,225.54	0.00	0.00	0.00
13,300.00	89.22	180.33	10,078.96	-3,307.52	-408.95	3,325.40	0.00	0.00	0.00
13,400.00	89.22	180.33	10,080.32	-3,407.51	-409.53	3,425.26	0.00	0.00	0.00
13,500.00	89.22	180.33	10,081.69	-3,507.50	-410.11	3,525.12	0.00	0.00	0.00
13,600.00	89.22	180.33	10,083.05	-3,607.49	-410.68	3,624.98	0.00	0.00	0.00
13,700.00	89.22	180.33	10,084.42	-3,707.48	-411.26	3,724.84	0.00	0.00	0.00

Devon Energy

Planning Report

Database: EDM r5000 US Production
Company: WESTERN DIVISION
Project: PBNM
Site: Dzurisin
Well: Thistle Unit 121H
Wellbore: Wellbore #1
Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.00	89.22	180.33	10,085.78	-3,807.47	-411.84	3,824.70	0.00	0.00	0.00
13,900.00	89.22	180.33	10,087.15	-3,907.46	-412.41	3,924.56	0.00	0.00	0.00
14,000.00	89.22	180.33	10,088.51	-4,007.45	-412.99	4,024.42	0.00	0.00	0.00
14,100.00	89.22	180.33	10,089.88	-4,107.43	-413.56	4,124.29	0.00	0.00	0.00
14,200.00	89.22	180.33	10,091.24	-4,207.42	-414.14	4,224.15	0.00	0.00	0.00
14,300.00	89.22	180.33	10,092.61	-4,307.41	-414.72	4,324.01	0.00	0.00	0.00
14,400.00	89.22	180.33	10,093.97	-4,407.40	-415.29	4,423.87	0.00	0.00	0.00
14,500.00	89.22	180.33	10,095.34	-4,507.39	-415.87	4,523.73	0.00	0.00	0.00
14,600.00	89.22	180.33	10,096.70	-4,607.38	-416.45	4,623.59	0.00	0.00	0.00
14,700.00	89.22	180.33	10,098.07	-4,707.37	-417.02	4,723.45	0.00	0.00	0.00
14,800.00	89.22	180.33	10,099.43	-4,807.36	-417.60	4,823.31	0.00	0.00	0.00
14,900.00	89.22	180.33	10,100.80	-4,907.35	-418.18	4,923.17	0.00	0.00	0.00
15,000.00	89.22	180.33	10,102.16	-5,007.34	-418.75	5,023.03	0.00	0.00	0.00
15,100.00	89.22	180.33	10,103.53	-5,107.33	-419.33	5,122.89	0.00	0.00	0.00
15,200.00	89.22	180.33	10,104.89	-5,207.31	-419.91	5,222.75	0.00	0.00	0.00
15,300.00	89.22	180.33	10,106.26	-5,307.30	-420.48	5,322.61	0.00	0.00	0.00
15,400.00	89.22	180.33	10,107.62	-5,407.29	-421.06	5,422.47	0.00	0.00	0.00
15,500.00	89.22	180.33	10,108.99	-5,507.28	-421.64	5,522.33	0.00	0.00	0.00
15,600.00	89.22	180.33	10,110.36	-5,607.27	-422.21	5,622.19	0.00	0.00	0.00
15,700.00	89.22	180.33	10,111.72	-5,707.26	-422.79	5,722.05	0.00	0.00	0.00
15,800.00	89.22	180.33	10,113.09	-5,807.25	-423.37	5,821.92	0.00	0.00	0.00
15,900.00	89.22	180.33	10,114.45	-5,907.24	-423.94	5,921.78	0.00	0.00	0.00
16,000.00	89.22	180.33	10,115.82	-6,007.23	-424.52	6,021.64	0.00	0.00	0.00
16,100.00	89.22	180.33	10,117.18	-6,107.22	-425.10	6,121.50	0.00	0.00	0.00
16,200.00	89.22	180.33	10,118.55	-6,207.20	-425.67	6,221.36	0.00	0.00	0.00
16,300.00	89.22	180.33	10,119.91	-6,307.19	-426.25	6,321.22	0.00	0.00	0.00
16,400.00	89.22	180.33	10,121.28	-6,407.18	-426.83	6,421.08	0.00	0.00	0.00
16,500.00	89.22	180.33	10,122.64	-6,507.17	-427.40	6,520.94	0.00	0.00	0.00
16,600.00	89.22	180.33	10,124.01	-6,607.16	-427.98	6,620.80	0.00	0.00	0.00
16,700.00	89.22	180.33	10,125.37	-6,707.15	-428.56	6,720.66	0.00	0.00	0.00
16,800.00	89.22	180.33	10,126.74	-6,807.14	-429.13	6,820.52	0.00	0.00	0.00
16,900.00	89.22	180.33	10,128.10	-6,907.13	-429.71	6,920.38	0.00	0.00	0.00
17,000.00	89.22	180.33	10,129.47	-7,007.12	-430.29	7,020.24	0.00	0.00	0.00
17,100.00	89.22	180.33	10,130.83	-7,107.11	-430.86	7,120.10	0.00	0.00	0.00
17,200.00	89.22	180.33	10,132.20	-7,207.09	-431.44	7,219.96	0.00	0.00	0.00
17,300.00	89.22	180.33	10,133.56	-7,307.08	-432.02	7,319.82	0.00	0.00	0.00
17,400.00	89.22	180.33	10,134.93	-7,407.07	-432.59	7,419.69	0.00	0.00	0.00
17,500.00	89.22	180.33	10,136.29	-7,507.06	-433.17	7,519.55	0.00	0.00	0.00
17,602.95	89.22	180.33	10,137.70	-7,610.00	-433.76	7,622.35	0.00	0.00	0.00
17,625.14	89.22	180.33	10,138.00	-7,632.19	-433.89	7,644.51	0.01	0.01	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Thistle Unit 121H BHL	0.00	0.00	10,138.00	-7,632.19	-433.89	464,873.87	776,299.24	0.000000	0.000000
- plan hits target center									
- Point									

Devon Energy
Anticollision Risk Report

HOBBS OCD
APR 04 2017
RECEIVED

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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	Plan 1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations Interval 100.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.00ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

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	17,625.14	Plan 1 (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
Offset Well - Wellbore - Design			Between Centres (ft)	Between Ellipses (ft)		
Dzurisin						
Thistle Unit 105H - Wellbore #1 - Plan 1	3,500.01	3,500.51	29.95	14.49	1.938 CC	
Thistle Unit 105H - Wellbore #1 - Plan 1	3,600.00	3,600.50	30.25	14.36	1.904 ES, SF	
Thistle Unit 108H - Wellbore #1 - Plan 1	3,466.63	3,466.73	63.59	48.28	4.154 CC	
Thistle Unit 108H - Wellbore #1 - Plan 1	3,500.00	3,500.00	63.59	48.13	4.114 ES	
Thistle Unit 108H - Wellbore #1 - Plan 1	17,626.12	17,144.06	970.39	541.95	2.265 SF	
Thistle Unit 119H - Wellbore #1 - Plan 1	3,500.00	3,499.00	50.02	34.57	3.237 CC, ES	
Thistle Unit 119H - Wellbore #1 - Plan 1	17,626.12	17,620.43	889.89	422.71	1.905 SF	

Offset Design		Dzurisin - Thistle Unit 105H - 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Risk Separation Factor	Probability of Collision		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)					
0.00	0.00	0.50	0.50	0.00	0.00	179.52	29.95				0			
100.00	100.00	100.50	100.50	0.09	0.09	179.52	29.95	29.78	0.17	173.058	0			
200.00	200.00	200.50	200.50	0.31	0.31	179.52	29.95	29.33	0.62	48.106	0			
300.00	300.00	300.50	300.50	0.54	0.54	179.52	29.95	28.88	1.07	27.936	0			
400.00	400.00	400.50	400.50	0.76	0.76	179.52	29.95	28.43	1.52	19.683	0			
500.00	500.00	500.50	500.50	0.99	0.99	179.52	29.95	27.98	1.97	15.194	0			
600.00	600.00	600.50	600.50	1.21	1.21	179.52	29.95	27.53	2.42	12.373	0			
700.00	700.00	700.50	700.50	1.43	1.44	179.52	29.95	27.08	2.87	10.435	0			
800.00	800.00	800.50	800.50	1.66	1.66	179.52	29.95	26.63	3.32	9.022	0			
900.00	900.00	900.50	900.50	1.88	1.89	179.52	29.95	26.18	3.77	7.946	0			
1,000.00	1,000.00	1,000.50	1,000.50	2.11	2.11	179.52	29.95	25.73	4.22	7.099	0			
1,100.00	1,100.00	1,100.50	1,100.50	2.33	2.33	179.52	29.95	25.28	4.67	6.416	0			
1,200.00	1,200.00	1,200.50	1,200.50	2.56	2.56	179.52	29.95	24.83	5.12	5.852	0			
1,300.00	1,300.00	1,300.50	1,300.50	2.78	2.78	179.52	29.95	24.38	5.57	5.380	0			
1,400.00	1,400.00	1,400.50	1,400.50	3.01	3.01	179.52	29.95	23.93	6.02	4.978	0			
1,500.00	1,500.00	1,500.50	1,500.50	3.23	3.23	179.52	29.95	23.48	6.47	4.632	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 105H - 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		
1,600.00	1,600.00	1,600.50	1,600.50	3.46	3.46	179.52	29.95	23.04	6.92	4.331	0			
1,700.00	1,700.00	1,700.50	1,700.50	3.68	3.68	179.52	29.95	22.59	7.37	4.066	0			
1,800.00	1,800.00	1,800.50	1,800.50	3.91	3.91	179.52	29.95	22.14	7.82	3.832	0			
1,900.00	1,900.00	1,900.50	1,900.50	4.13	4.13	179.52	29.95	21.69	8.26	3.624	0			
2,000.00	2,000.00	2,000.50	2,000.50	4.36	4.36	179.52	29.95	21.24	8.71	3.437	0			
2,100.00	2,100.00	2,100.50	2,100.50	4.58	4.58	179.52	29.95	20.79	9.16	3.268	0			
2,200.00	2,200.00	2,200.50	2,200.50	4.81	4.81	179.52	29.95	20.34	9.61	3.116	0			
2,300.00	2,300.00	2,300.50	2,300.50	5.03	5.03	179.52	29.95	19.89	10.06	2.976	0			
2,400.00	2,400.00	2,400.50	2,400.50	5.26	5.26	179.52	29.95	19.44	10.51	2.849	0			
2,500.00	2,500.00	2,500.50	2,500.50	5.48	5.48	179.52	29.95	18.99	10.96	2.732	0			
2,600.00	2,600.00	2,600.50	2,600.50	5.71	5.71	179.52	29.95	18.54	11.41	2.625	0			
2,700.00	2,700.00	2,700.50	2,700.50	5.93	5.93	179.52	29.95	18.09	11.86	2.525	0			
2,800.00	2,800.00	2,800.50	2,800.50	6.15	6.16	179.52	29.95	17.64	12.31	2.433	0			
2,900.00	2,900.00	2,900.50	2,900.50	6.38	6.38	179.52	29.95	17.19	12.76	2.347	0			
3,000.00	3,000.00	3,000.50	3,000.50	6.60	6.61	179.52	29.95	16.74	13.21	2.267	0			
3,100.00	3,100.00	3,100.50	3,100.50	6.83	6.83	179.52	29.95	16.29	13.66	2.193	0			
3,200.00	3,200.00	3,200.50	3,200.50	7.05	7.05	179.52	29.95	15.84	14.11	2.123	0			
3,300.00	3,300.00	3,300.50	3,300.50	7.28	7.28	179.52	29.95	15.39	14.56	2.057	0			
3,400.00	3,400.00	3,400.50	3,400.50	7.50	7.50	179.52	29.95	14.94	15.01	1.996	0			
3,500.00	3,500.00	3,500.50	3,500.50	7.73	7.73	179.52	29.95	14.49	15.46	1.938	0			
3,500.01	3,500.01	3,500.51	3,500.51	7.73	7.73	179.52	29.95	14.49	15.46	1.938	0		CC	
3,600.00	3,600.00	3,600.50	3,600.50	7.94	7.94	-110.35	30.25	14.36	15.88	1.904	0		ES, SF	
3,700.00	3,699.96	3,700.50	3,700.46	8.16	8.14	-110.03	31.14	14.85	16.30	1.911	0			
3,800.00	3,799.86	3,800.49	3,800.35	8.37	8.35	-109.54	32.64	15.92	16.72	1.952	0			
3,900.00	3,899.68	3,900.46	3,900.13	8.59	8.56	-108.92	34.73	17.58	17.15	2.025	0			
4,000.00	3,999.37	4,000.41	3,999.77	8.82	8.79	-108.24	37.42	19.81	17.61	2.125	0			
4,100.00	4,098.99	4,100.36	4,099.34	9.06	9.03	-107.62	40.42	22.34	18.09	2.235	0			
4,200.00	4,198.60	4,200.31	4,198.92	9.31	9.27	-107.09	43.42	24.85	18.57	2.338	0			
4,300.00	4,298.22	4,300.27	4,298.49	9.56	9.52	-106.63	46.43	27.35	19.08	2.434	0			
4,400.00	4,397.84	4,400.22	4,398.06	9.82	9.77	-106.22	49.43	29.85	19.59	2.524	0			
4,500.00	4,497.46	4,500.18	4,497.64	10.09	10.04	-105.86	52.44	32.33	20.11	2.608	0			
4,600.00	4,597.08	4,600.13	4,597.21	10.36	10.30	-105.54	55.46	34.81	20.64	2.686	0			
4,700.00	4,696.70	4,700.08	4,696.79	10.63	10.57	-105.25	58.47	37.28	21.19	2.760	0			
4,800.00	4,796.32	4,800.04	4,796.36	10.91	10.85	-104.99	61.48	39.75	21.73	2.829	0			
4,900.00	4,895.94	4,899.99	4,895.93	11.19	11.13	-104.75	64.50	42.21	22.29	2.893	0			
5,000.00	4,995.56	4,999.95	4,995.51	11.47	11.41	-104.54	67.51	44.66	22.86	2.954	0			
5,100.00	5,095.18	5,099.90	5,095.08	11.76	11.70	-104.34	70.53	47.10	23.43	3.011	0			
5,200.00	5,194.80	5,199.86	5,194.66	12.05	11.99	-104.16	73.55	49.55	24.00	3.064	0			
5,300.00	5,294.42	5,299.81	5,294.23	12.34	12.28	-104.00	76.57	51.98	24.59	3.114	0			
5,400.00	5,394.04	5,399.76	5,393.80	12.64	12.58	-103.84	79.59	54.41	25.17	3.162	0			
5,500.00	5,493.66	5,499.72	5,493.38	12.93	12.87	-103.70	82.61	56.84	25.77	3.206	0			
5,600.00	5,593.28	5,599.67	5,592.95	13.23	13.18	-103.57	85.63	59.26	26.36	3.248	0			
5,700.00	5,692.90	5,699.63	5,692.52	13.54	13.48	-103.45	88.65	61.68	26.96	3.288	0			
5,800.00	5,792.52	5,799.58	5,792.10	13.84	13.78	-103.33	91.67	64.10	27.57	3.325	0			
5,900.00	5,892.14	5,899.54	5,891.67	14.15	14.09	-103.22	94.69	66.51	28.18	3.360	0			
6,000.00	5,991.76	5,999.49	5,991.25	14.46	14.40	-103.12	97.71	68.92	28.79	3.394	0			
6,100.00	6,091.37	6,099.44	6,090.82	14.77	14.71	-103.03	100.74	71.33	29.41	3.426	0			
6,200.00	6,190.99	6,199.40	6,190.39	15.08	15.02	-102.94	103.76	73.73	30.03	3.456	0			
6,300.00	6,290.61	6,299.35	6,289.97	15.39	15.34	-102.85	106.78	76.13	30.65	3.484	0			
6,400.00	6,390.23	6,399.31	6,389.54	15.70	15.65	-102.77	109.80	78.53	31.27	3.511	0			
6,500.00	6,489.85	6,499.26	6,489.12	16.02	15.97	-102.70	112.83	80.93	31.90	3.537	0			
6,600.00	6,589.47	6,599.21	6,588.69	16.34	16.29	-102.63	115.85	83.32	32.53	3.562	0			
6,700.00	6,689.09	6,699.17	6,688.26	16.65	16.61	-102.56	118.87	85.71	33.16	3.585	0			
6,800.00	6,788.71	6,799.12	6,787.84	16.97	16.93	-102.50	121.90	88.10	33.79	3.607	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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		Minimum Separation		Risked Separation Factor		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	Probability of Collision		
6,900.00	6,888.33	6,899.08	6,887.41	17.29	17.25	-102.43	124.92	90.49	34.43	3.628	0		
7,000.00	6,987.95	6,999.03	6,986.98	17.61	17.57	-102.38	127.94	92.88	35.07	3.649	0		
7,100.00	7,087.57	7,098.99	7,086.56	17.93	17.89	-102.32	130.97	95.26	35.71	3.668	0		
7,200.00	7,187.19	7,198.94	7,186.13	18.25	18.22	-102.27	133.99	97.64	36.35	3.686	0		
7,300.00	7,286.81	7,298.89	7,285.71	18.58	18.54	-102.22	137.02	100.03	36.99	3.704	0		
7,400.00	7,386.43	7,398.85	7,385.28	18.90	18.87	-102.17	140.04	102.41	37.63	3.721	0		
7,500.00	7,486.05	7,498.80	7,484.85	19.23	19.20	-102.12	143.06	104.78	38.28	3.737	0		
7,600.00	7,585.67	7,598.76	7,584.43	19.55	19.52	-102.08	146.09	107.16	38.93	3.753	0		
7,700.00	7,685.29	7,698.71	7,684.00	19.88	19.85	-102.03	149.11	109.54	39.58	3.768	0		
7,800.00	7,784.91	7,798.66	7,783.58	20.20	20.18	-101.99	152.14	111.91	40.23	3.782	0		
7,900.00	7,884.53	7,898.62	7,883.15	20.53	20.51	-101.95	155.16	114.29	40.88	3.796	0		
8,000.00	7,984.14	7,998.57	7,982.72	20.86	20.84	-101.91	158.19	116.66	41.53	3.809	0		
8,100.00	8,083.80	8,098.72	8,082.53	21.12	21.11	-101.89	161.06	119.01	42.06	3.830	0		
8,200.00	8,183.53	8,198.89	8,182.42	21.32	21.30	-101.87	163.64	121.18	42.46	3.854	0		
8,300.00	8,283.31	8,299.07	8,282.38	21.52	21.50	-101.85	165.91	123.06	42.85	3.872	0		
8,400.00	8,383.15	8,399.25	8,382.40	21.71	21.69	-101.83	167.88	124.64	43.23	3.883	0		
8,500.00	8,483.03	8,499.45	8,482.48	21.90	21.88	-101.82	169.54	125.93	43.61	3.888	0		
8,600.00	8,582.96	8,599.65	8,582.61	22.08	22.07	-101.81	170.91	126.93	43.98	3.886	0		
8,700.00	8,682.91	8,699.86	8,682.77	22.26	22.25	-101.81	171.97	127.63	44.34	3.879	0		
8,800.00	8,782.89	8,800.07	8,782.96	22.43	22.42	-101.80	172.72	128.04	44.68	3.865	0		
8,900.00	8,882.88	8,900.29	8,883.16	22.60	22.59	-101.80	173.18	128.16	45.02	3.847	0		
9,000.00	8,982.88	9,000.50	8,983.38	22.76	22.75	-171.80	173.33	127.98	45.34	3.823	0		
9,100.00	9,082.88	9,100.50	9,083.38	22.93	22.92	-171.80	173.33	127.64	45.69	3.794	0		
9,200.00	9,182.88	9,200.50	9,183.38	23.12	23.11	-171.80	173.33	127.26	46.07	3.762	0		
9,236.49	9,219.36	9,236.99	9,219.86	23.19	23.18	-171.80	173.33	127.12	46.21	3.751	0		
9,300.00	9,282.88	9,287.88	9,270.72	23.31	23.27	-171.86	175.05	128.63	46.42	3.771	0		
9,400.00	9,382.88	9,359.69	9,341.68	23.51	23.39	-172.32	189.73	143.01	46.72	4.061	0		
9,500.00	9,482.88	9,425.00	9,404.18	23.70	23.51	-173.01	218.57	171.58	46.99	4.651	0		
9,578.00	9,560.88	9,475.00	9,449.96	23.85	23.61	-173.62	249.85	202.65	47.20	5.293	0		
9,600.00	9,582.87	9,487.84	9,461.36	23.89	23.64	5.77	259.48	212.27	47.20	5.497	0		
9,625.00	9,607.80	9,500.00	9,472.01	23.92	23.67	5.51	269.98	222.86	47.12	5.730	0		
9,650.00	9,632.60	9,517.00	9,486.63	23.95	23.71	5.23	279.96	233.01	46.95	5.963	0		
9,675.00	9,657.21	9,531.50	9,498.85	23.98	23.74	5.01	289.45	242.76	46.69	6.200	0		
9,700.00	9,681.55	9,550.00	9,514.09	24.00	23.79	4.79	298.49	252.14	46.35	6.441	0		
9,725.00	9,705.56	9,560.35	9,522.44	24.02	23.82	4.64	306.91	261.00	45.91	6.685	0		
9,750.00	9,729.18	9,575.00	9,534.02	24.04	23.86	4.48	314.86	269.47	45.39	6.936	0		
9,775.00	9,752.33	9,589.05	9,544.86	24.06	23.90	4.34	322.28	277.48	44.80	7.193	0		
9,800.00	9,774.96	9,600.00	9,553.13	24.07	23.93	4.23	329.20	285.07	44.13	7.459	0		
9,825.00	9,797.01	9,617.61	9,566.07	24.08	23.99	4.11	335.52	292.12	43.40	7.731	0		
9,850.00	9,818.40	9,631.86	9,576.21	24.09	24.04	4.01	341.33	298.72	42.60	8.012	0		
9,875.00	9,839.09	9,650.00	9,588.69	24.10	24.11	3.91	346.62	304.87	41.75	8.302	0		
9,900.00	9,859.02	9,660.27	9,595.53	24.12	24.15	3.85	351.29	310.45	40.84	8.602	0		
9,925.00	9,878.13	9,675.00	9,605.04	24.13	24.21	3.78	355.44	315.55	39.89	8.910	0		
9,950.00	9,896.37	9,688.62	9,613.52	24.14	24.27	3.73	359.03	320.12	38.91	9.228	0		
9,975.00	9,913.69	9,700.00	9,620.38	24.16	24.32	3.69	362.07	324.18	37.89	9.555	0		
10,000.00	9,930.04	9,716.91	9,630.16	24.18	24.41	3.64	364.52	327.65	36.87	9.886	0		
10,025.00	9,945.38	9,731.04	9,637.96	24.20	24.49	3.61	366.42	330.58	35.84	10.223	0		
10,050.00	9,959.67	9,750.00	9,647.86	24.23	24.60	3.59	367.81	332.98	34.83	10.561	0		
10,075.00	9,972.86	9,759.28	9,652.48	24.27	24.65	3.57	368.52	334.69	33.83	10.895	0		
10,100.00	9,984.93	9,775.00	9,659.93	24.31	24.76	3.56	368.72	335.85	32.87	11.219	0		
10,125.00	9,995.83	9,787.52	9,665.54	24.37	24.85	3.56	368.34	336.39	31.96	11.526	0		
10,150.00	10,005.54	9,800.00	9,670.83	24.45	24.94	3.57	367.41	336.29	31.12	11.808	0		
10,175.00	10,014.04	9,815.77	9,677.10	24.54	25.06	3.58	365.89	335.53	30.36	12.051	0		
10,200.00	10,021.29	9,825.00	9,680.54	24.66	25.14	3.60	363.88	334.17	29.70	12.251	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 105H - 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	
10,225.00	10,027.27	9,844.05	9,687.13	24.80	25.30	3.63	361.18	332.01	29.17	12.381	0		
10,250.00	10,031.98	9,858.20	9,691.55	24.98	25.44	3.67	357.98	329.21	28.76	12.445	0		
10,275.00	10,035.40	9,875.00	9,696.29	25.18	25.60	3.72	354.23	325.72	28.50	12.427	0		
10,300.00	10,037.52	9,886.55	9,699.21	25.42	25.72	3.77	349.89	321.50	28.39	12.326	0		
10,321.50	10,038.30	9,900.00	9,702.27	25.65	25.87	3.82	345.73	317.32	28.41	12.167	0		
10,343.33	10,038.59	9,911.24	9,704.55	25.86	26.00	3.84	341.58	313.11	28.47	11.997	0		
10,400.00	10,039.37	9,944.13	9,709.72	26.43	26.40	3.88	333.44	304.81	28.63	11.647	0		
10,488.53	10,040.58	9,996.41	9,713.30	27.75	27.11	3.88	328.57	299.66	28.91	11.366	0		
10,500.00	10,040.73	10,004.04	9,713.34	27.93	27.22	3.88	328.64	299.70	28.95	11.353	0		
10,600.00	10,042.10	10,104.03	9,713.55	29.71	28.82	3.81	329.78	300.39	29.39	11.222	0		
10,700.00	10,043.46	10,204.02	9,713.76	31.71	30.67	3.74	330.91	301.02	29.89	11.070	0		
10,800.00	10,044.83	10,304.01	9,713.96	33.87	32.71	3.68	332.05	301.59	30.46	10.900	0		
10,900.00	10,046.19	10,404.00	9,714.17	36.16	34.91	3.61	333.19	302.09	31.09	10.715	0		
11,000.00	10,047.56	10,504.00	9,714.37	38.56	37.24	3.55	334.33	302.54	31.78	10.519	0		
11,100.00	10,048.92	10,603.99	9,714.58	41.04	39.67	3.48	335.46	302.94	32.52	10.315	0		
11,200.00	10,050.29	10,703.98	9,714.79	43.60	42.18	3.42	336.60	303.29	33.31	10.104	0		
11,300.00	10,051.65	10,803.98	9,714.99	46.22	44.75	3.35	337.74	303.59	34.15	9.891	0		
11,400.00	10,053.02	10,903.97	9,715.20	48.88	47.39	3.29	338.88	303.86	35.02	9.676	0		
11,500.00	10,054.38	11,003.96	9,715.40	51.59	50.07	3.22	340.02	304.08	35.94	9.461	0		
11,600.00	10,055.75	11,103.95	9,715.61	54.33	52.79	3.16	341.16	304.27	36.89	9.249	0		
11,700.00	10,057.12	11,203.95	9,715.81	57.10	55.54	3.10	342.30	304.43	37.87	9.039	0		
11,800.00	10,058.48	11,303.94	9,716.02	59.90	58.33	3.03	343.44	304.56	38.88	8.833	0		
11,900.00	10,059.85	11,403.93	9,716.22	62.72	61.13	2.97	344.58	304.66	39.92	8.632	0		
12,000.00	10,061.21	11,503.93	9,716.43	65.56	63.96	2.91	345.73	304.74	40.98	8.436	0		
12,100.00	10,062.58	11,603.92	9,716.64	68.42	66.81	2.85	346.87	304.80	42.07	8.245	0		
12,200.00	10,063.94	11,703.91	9,716.84	71.29	69.67	2.79	348.01	304.83	43.18	8.060	0		
12,300.00	10,065.31	11,803.90	9,717.05	74.18	72.55	2.73	349.15	304.85	44.31	7.880	0		
12,400.00	10,066.67	11,903.90	9,717.25	77.08	75.44	2.67	350.30	304.85	45.45	7.707	0		
12,500.00	10,068.04	12,003.89	9,717.46	79.98	78.35	2.61	351.44	304.83	46.61	7.539	0		
12,600.00	10,069.40	12,103.88	9,717.66	82.90	81.26	2.55	352.59	304.79	47.79	7.378	0		
12,700.00	10,070.77	12,203.87	9,717.87	85.83	84.18	2.49	353.73	304.75	48.98	7.222	0		
12,800.00	10,072.13	12,303.87	9,718.08	88.76	87.11	2.43	354.88	304.69	50.19	7.071	0		
12,900.00	10,073.50	12,403.86	9,718.28	91.70	90.05	2.37	356.02	304.62	51.40	6.926	0		
13,000.00	10,074.86	12,503.85	9,718.49	94.65	92.99	2.32	357.17	304.54	52.63	6.786	0		
13,100.00	10,076.23	12,603.85	9,718.69	97.60	95.94	2.26	358.31	304.44	53.87	6.652	0		
13,200.00	10,077.59	12,703.84	9,718.90	100.56	98.90	2.20	359.46	304.34	55.12	6.522	0		
13,300.00	10,078.96	12,803.83	9,719.10	103.52	101.86	2.15	360.61	304.23	56.37	6.397	0		
13,400.00	10,080.32	12,903.82	9,719.31	106.49	104.82	2.09	361.75	304.11	57.64	6.276	0		
13,500.00	10,081.69	13,003.82	9,719.52	109.46	107.79	2.03	362.90	303.99	58.91	6.160	0		
13,600.00	10,083.05	13,103.81	9,719.72	112.43	110.76	1.98	364.05	303.86	60.19	6.048	0		
13,700.00	10,084.42	13,203.80	9,719.93	115.41	113.74	1.92	365.20	303.72	61.48	5.940	0		
13,800.00	10,085.78	13,303.80	9,720.13	118.39	116.72	1.87	366.34	303.57	62.77	5.836	0		
13,900.00	10,087.15	13,403.79	9,720.34	121.38	119.70	1.81	367.49	303.42	64.07	5.736	0		
14,000.00	10,088.51	13,503.78	9,720.54	124.36	122.69	1.76	368.64	303.26	65.38	5.639	0		
14,100.00	10,089.88	13,603.77	9,720.75	127.35	125.67	1.70	369.79	303.10	66.69	5.545	0		
14,200.00	10,091.24	13,703.77	9,720.96	130.34	128.66	1.65	370.94	302.93	68.01	5.454	0		
14,300.00	10,092.61	13,803.76	9,721.16	133.34	131.66	1.60	372.09	302.76	69.33	5.367	0		
14,400.00	10,093.97	13,903.75	9,721.37	136.33	134.65	1.55	373.24	302.59	70.65	5.283	0		
14,500.00	10,095.34	14,003.75	9,721.57	139.33	137.65	1.49	374.39	302.41	71.99	5.201	0		
14,600.00	10,096.70	14,103.74	9,721.78	142.33	140.65	1.44	375.54	302.22	73.32	5.122	0		
14,700.00	10,098.07	14,203.73	9,721.98	145.33	143.65	1.39	376.70	302.04	74.66	5.046	0		
14,800.00	10,099.43	14,303.72	9,722.19	148.33	146.65	1.34	377.85	301.84	76.00	4.971	0		
14,900.00	10,100.80	14,403.72	9,722.40	151.34	149.65	1.29	379.00	301.65	77.35	4.900	0		
15,000.00	10,102.16	14,503.71	9,722.60	154.34	152.66	1.23	380.15	301.45	78.70	4.830	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 105H - Wellbore #1 - Plan 1													Offset Well Error: 0.00 ft	
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Risked Separation Factor	Probability of Collision		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)					
15,100.00	10,103.53	14,603.70	9,722.81	157.35	155.66	1.18	381.30	301.25	80.05	4.763	0			
15,200.00	10,104.89	14,703.69	9,723.01	160.36	158.67	1.13	382.46	301.05	81.41	4.698	0			
15,300.00	10,106.26	14,803.69	9,723.22	163.37	161.68	1.08	383.61	300.84	82.77	4.635	0			
15,400.00	10,107.62	14,903.68	9,723.42	166.38	164.69	1.03	384.76	300.63	84.14	4.573	0			
15,500.00	10,108.99	15,003.67	9,723.63	169.39	167.70	0.98	385.92	300.42	85.50	4.514	0			
15,600.00	10,110.36	15,103.67	9,723.84	172.40	170.71	0.94	387.07	300.20	86.87	4.456	0			
15,700.00	10,111.72	15,203.66	9,724.04	175.41	173.72	0.89	388.23	299.98	88.24	4.399	0			
15,800.00	10,113.09	15,303.65	9,724.25	178.43	176.74	0.84	389.38	299.76	89.62	4.345	0			
15,900.00	10,114.45	15,403.64	9,724.45	181.44	179.75	0.79	390.54	299.54	91.00	4.292	0			
16,000.00	10,115.82	15,503.64	9,724.66	184.46	182.77	0.74	391.69	299.31	92.38	4.240	0			
16,100.00	10,117.18	15,603.63	9,724.86	187.48	185.78	0.69	392.85	299.08	93.76	4.190	0			
16,200.00	10,118.55	15,703.62	9,725.07	190.49	188.80	0.65	394.00	298.85	95.15	4.141	0			
16,300.00	10,119.91	15,803.62	9,725.28	193.51	191.82	0.60	395.16	298.62	96.54	4.093	0			
16,400.00	10,121.28	15,903.61	9,725.48	196.53	194.84	0.55	396.31	298.39	97.93	4.047	0			
16,500.00	10,122.64	16,003.60	9,725.69	199.55	197.86	0.51	397.47	298.15	99.32	4.002	0			
16,600.00	10,124.01	16,103.59	9,725.89	202.57	200.88	0.46	398.63	297.91	100.72	3.958	0			
16,700.00	10,125.37	16,203.59	9,726.10	205.59	203.90	0.41	399.78	297.67	102.11	3.915	0			
16,800.00	10,126.74	16,303.58	9,726.30	208.61	206.92	0.37	400.94	297.43	103.52	3.873	0			
16,900.00	10,128.10	16,403.57	9,726.51	211.63	209.94	0.32	402.10	297.18	104.92	3.833	0			
17,000.00	10,129.47	16,503.56	9,726.72	214.65	212.96	0.28	403.26	296.93	106.32	3.793	0			
17,100.00	10,130.83	16,603.56	9,726.92	217.68	215.98	0.23	404.41	296.68	107.73	3.754	0			
17,200.00	10,132.20	16,703.55	9,727.13	220.70	219.01	0.19	405.57	296.43	109.14	3.716	0			
17,300.00	10,133.56	16,803.54	9,727.33	223.72	222.03	0.14	406.73	296.18	110.55	3.679	0			
17,400.00	10,134.93	16,903.54	9,727.54	226.75	225.05	0.10	407.89	295.92	111.97	3.643	0			
17,500.00	10,136.29	17,003.53	9,727.74	229.77	228.08	0.05	409.05	295.67	113.38	3.608	0			
17,602.95	10,137.70	17,106.47	9,727.96	232.88	231.15	0.01	410.24	295.40	114.84	3.572	0			
17,625.14	10,138.00	17,127.81	9,728.00	233.55	231.62	0.00	410.50	295.35	115.15	3.565	0			
17,626.12	10,138.01	17,127.81	9,728.00	233.58	231.62	0.00	410.51	295.36	115.15	3.565	0			

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 108H - 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	
0.00	0.00	0.10	0.10	0.00	0.00	117.79	63.59				0		
100.00	100.00	100.10	100.10	0.09	0.09	117.79	63.59	63.41	0.17	369.320	0		
200.00	200.00	200.10	200.10	0.31	0.31	117.79	63.59	62.96	0.62	102.277	0		
300.00	300.00	300.10	300.10	0.54	0.54	117.79	63.59	62.51	1.07	59.358	0		
400.00	400.00	400.10	400.10	0.76	0.76	117.79	63.59	62.07	1.52	41.812	0		
500.00	500.00	500.10	500.10	0.99	0.99	117.79	63.59	61.62	1.97	32.272	0		
600.00	600.00	600.10	600.10	1.21	1.21	117.79	63.59	61.17	2.42	26.277	0		
700.00	700.00	700.10	700.10	1.43	1.43	117.79	63.59	60.72	2.87	22.160	0		
800.00	800.00	800.10	800.10	1.66	1.66	117.79	63.59	60.27	3.32	19.159	0		
900.00	900.00	900.10	900.10	1.88	1.88	117.79	63.59	59.82	3.77	16.873	0		
1,000.00	1,000.00	1,000.10	1,000.10	2.11	2.11	117.79	63.59	59.37	4.22	15.075	0		
1,100.00	1,100.00	1,100.10	1,100.10	2.33	2.33	117.79	63.59	58.92	4.67	13.623	0		
1,200.00	1,200.00	1,200.10	1,200.10	2.56	2.56	117.79	63.59	58.47	5.12	12.426	0		
1,300.00	1,300.00	1,300.10	1,300.10	2.78	2.78	117.79	63.59	58.02	5.57	11.423	0		
1,400.00	1,400.00	1,400.10	1,400.10	3.01	3.01	117.79	63.59	57.57	6.02	10.569	0		
1,500.00	1,500.00	1,500.10	1,500.10	3.23	3.23	117.79	63.59	57.12	6.47	9.835	0		
1,600.00	1,600.00	1,600.10	1,600.10	3.46	3.46	117.79	63.59	56.67	6.92	9.195	0		
1,700.00	1,700.00	1,700.10	1,700.10	3.68	3.68	117.79	63.59	56.22	7.36	8.634	0		
1,800.00	1,800.00	1,800.10	1,800.10	3.91	3.91	117.79	63.59	55.77	7.81	8.137	0		
1,900.00	1,900.00	1,900.10	1,900.10	4.13	4.13	117.79	63.59	55.32	8.26	7.695	0		
2,000.00	2,000.00	2,000.10	2,000.10	4.36	4.36	117.79	63.59	54.87	8.71	7.298	0		
2,100.00	2,100.00	2,100.10	2,100.10	4.58	4.58	117.79	63.59	54.42	9.16	6.940	0		
2,200.00	2,200.00	2,200.10	2,200.10	4.81	4.81	117.79	63.59	53.97	9.61	6.615	0		
2,300.00	2,300.00	2,300.10	2,300.10	5.03	5.03	117.79	63.59	53.52	10.06	6.320	0		
2,400.00	2,400.00	2,400.10	2,400.10	5.26	5.26	117.79	63.59	53.07	10.51	6.049	0		
2,500.00	2,500.00	2,500.10	2,500.10	5.48	5.48	117.79	63.59	52.63	10.96	5.801	0		
2,600.00	2,600.00	2,600.10	2,600.10	5.71	5.71	117.79	63.59	52.18	11.41	5.573	0		
2,700.00	2,700.00	2,700.10	2,700.10	5.93	5.93	117.79	63.59	51.73	11.86	5.361	0		
2,800.00	2,800.00	2,800.10	2,800.10	6.15	6.15	117.79	63.59	51.28	12.31	5.166	0		
2,900.00	2,900.00	2,900.10	2,900.10	6.38	6.38	117.79	63.59	50.83	12.76	4.984	0		
3,000.00	3,000.00	3,000.10	3,000.10	6.60	6.60	117.79	63.59	50.38	13.21	4.814	0		
3,100.00	3,100.00	3,100.10	3,100.10	6.83	6.83	117.79	63.59	49.93	13.66	4.656	0		
3,200.00	3,200.00	3,200.10	3,200.10	7.05	7.05	117.79	63.59	49.48	14.11	4.507	0		
3,300.00	3,300.00	3,300.10	3,300.10	7.28	7.28	117.79	63.59	49.03	14.56	4.368	0		
3,400.00	3,400.00	3,400.10	3,400.10	7.50	7.50	117.79	63.59	48.58	15.01	4.237	0		
3,466.63	3,466.63	3,466.73	3,466.73	7.65	7.65	117.79	63.59	48.28	15.31	4.154	0		CC
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	117.79	63.59	48.13	15.46	4.114	0		ES
3,600.00	3,600.00	3,599.10	3,599.09	7.94	7.94	-172.66	65.22	49.34	15.88	4.107	0		
3,700.00	3,699.96	3,697.92	3,697.88	8.16	8.14	-173.89	70.13	53.86	16.27	4.309	0		
3,800.00	3,799.86	3,796.40	3,796.27	8.37	8.34	-175.59	78.37	61.70	16.67	4.702	0		
3,900.00	3,899.68	3,894.37	3,894.06	8.59	8.55	-177.44	89.97	72.92	17.06	5.275	0		
4,000.00	3,999.37	3,991.65	3,991.05	8.82	8.77	-179.22	104.96	87.52	17.44	6.017	0		
4,100.00	4,098.99	4,090.04	4,089.06	9.06	9.00	179.28	121.80	103.95	17.85	6.823	0		
4,200.00	4,198.60	4,188.56	4,187.21	9.31	9.24	178.13	138.71	120.45	18.26	7.595	0		
4,300.00	4,298.22	4,287.09	4,285.36	9.56	9.49	177.24	155.67	136.99	18.68	8.335	0		
4,400.00	4,397.84	4,385.62	4,383.52	9.82	9.74	176.52	172.65	153.56	19.09	9.044	0		
4,500.00	4,497.46	4,484.14	4,481.67	10.09	9.99	175.93	189.65	170.14	19.51	9.722	0		
4,600.00	4,497.08	4,582.67	4,579.82	10.36	10.26	175.44	206.67	186.75	19.93	10.372	0		
4,700.00	4,496.70	4,681.20	4,677.97	10.63	10.52	175.02	223.71	203.36	20.35	10.994	0		
4,800.00	4,496.32	4,779.72	4,776.12	10.91	10.79	174.66	240.75	219.98	20.77	11.591	0		
4,900.00	4,495.94	4,878.25	4,874.27	11.19	11.07	174.35	257.80	236.61	21.19	12.164	0		
5,000.00	4,495.56	4,976.78	4,972.43	11.47	11.35	174.08	274.86	253.24	21.62	12.713	0		
5,100.00	5,095.18	5,075.30	5,070.58	11.76	11.63	173.84	291.92	269.87	22.05	13.240	0		
5,200.00	5,194.80	5,173.83	5,168.73	12.05	11.91	173.62	308.99	286.51	22.48	13.747	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 108H - 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	
5,300.00	5,294.42	5,272.36	5,266.88	12.34	12.20	173.43	326.06	303.15	22.91	14.234	0		
5,400.00	5,394.04	5,370.88	5,365.03	12.64	12.49	173.26	343.13	319.79	23.34	14.702	0		
5,500.00	5,493.66	5,469.41	5,463.18	12.93	12.78	173.10	360.21	336.44	23.77	15.153	0		
5,600.00	5,593.28	5,567.94	5,561.34	13.23	13.08	172.96	377.29	353.08	24.21	15.587	0		
5,700.00	5,692.90	5,666.46	5,659.49	13.54	13.38	172.83	394.37	369.73	24.64	16.005	0		
5,800.00	5,792.52	5,764.99	5,757.64	13.84	13.68	172.71	411.45	386.37	25.08	16.407	0		
5,900.00	5,892.14	5,863.52	5,855.79	14.15	13.98	172.60	428.54	403.02	25.51	16.796	0		
6,000.00	5,991.76	5,962.04	5,953.94	14.46	14.28	172.50	445.62	419.67	25.95	17.170	0		
6,100.00	6,091.37	6,060.57	6,052.09	14.77	14.59	172.40	462.71	436.32	26.39	17.532	0		
6,200.00	6,190.99	6,159.10	6,150.25	15.08	14.90	172.32	479.80	452.97	26.83	17.881	0		
6,300.00	6,290.61	6,257.62	6,248.40	15.39	15.21	172.24	496.89	469.61	27.27	18.219	0		
6,400.00	6,390.23	6,356.15	6,346.55	15.70	15.52	172.16	513.98	486.26	27.71	18.545	0		
6,500.00	6,489.85	6,454.68	6,444.70	16.02	15.83	172.09	531.07	502.91	28.16	18.861	0		
6,600.00	6,589.47	6,553.20	6,542.85	16.34	16.14	172.02	548.16	519.56	28.60	19.166	0		
6,700.00	6,689.09	6,651.73	6,641.00	16.65	16.45	171.96	565.25	536.21	29.04	19.462	0		
6,800.00	6,788.71	6,750.26	6,739.16	16.97	16.77	171.90	582.35	552.86	29.49	19.748	0		
6,900.00	6,888.33	6,848.78	6,837.31	17.29	17.09	171.85	599.44	569.51	29.93	20.025	0		
7,000.00	6,987.95	6,947.31	6,935.46	17.61	17.40	171.80	616.53	586.15	30.38	20.294	0		
7,100.00	7,087.57	7,045.84	7,033.61	17.93	17.72	171.75	633.63	602.80	30.83	20.554	0		
7,200.00	7,187.19	7,144.36	7,131.76	18.25	18.04	171.70	650.72	619.45	31.27	20.807	0		
7,300.00	7,286.81	7,242.89	7,229.91	18.58	18.36	171.65	667.82	636.10	31.72	21.052	0		
7,400.00	7,386.43	7,341.42	7,328.07	18.90	18.68	171.61	684.92	652.75	32.17	21.291	0		
7,500.00	7,486.05	7,439.94	7,426.22	19.23	19.00	171.57	702.01	669.39	32.62	21.522	0		
7,600.00	7,585.67	7,538.47	7,524.37	19.55	19.33	171.53	719.11	686.04	33.07	21.746	0		
7,700.00	7,685.29	7,637.00	7,622.52	19.88	19.65	171.50	736.21	702.69	33.52	21.965	0		
7,800.00	7,784.91	7,735.52	7,720.67	20.20	19.97	171.46	753.30	719.34	33.97	22.177	0		
7,900.00	7,884.53	7,834.05	7,818.82	20.53	20.30	171.43	770.40	735.98	34.42	22.383	0		
8,000.00	7,984.14	7,932.57	7,916.98	20.86	20.62	171.40	787.50	752.63	34.87	22.584	0		
8,100.00	8,083.80	8,033.48	8,017.50	21.12	20.93	171.37	804.13	768.81	35.32	22.768	0		
8,200.00	8,183.53	8,139.71	8,123.39	21.32	21.19	171.35	819.22	783.48	35.74	22.922	0		
8,300.00	8,283.31	8,246.35	8,229.77	21.52	21.40	171.33	832.55	796.40	36.15	23.031	0		
8,400.00	8,383.15	8,353.35	8,336.57	21.71	21.61	171.31	844.12	807.57	36.56	23.091	0		
8,500.00	8,483.03	8,460.66	8,443.74	21.90	21.81	171.30	853.93	816.96	36.96	23.103	0		
8,600.00	8,582.96	8,568.24	8,551.22	22.08	22.01	171.29	861.95	824.59	37.36	23.069	0		
8,700.00	8,682.91	8,676.02	8,658.94	22.26	22.20	171.28	868.20	830.44	37.77	22.989	0		
8,800.00	8,782.89	8,783.96	8,766.85	22.43	22.39	171.28	872.67	834.51	38.16	22.867	0		
8,900.00	8,882.88	8,892.01	8,874.89	22.60	22.58	171.27	875.35	836.79	38.56	22.702	0		
9,000.00	8,982.88	9,000.10	8,982.98	22.76	22.75	101.27	876.24	837.30	38.95	22.498	0		
9,100.00	9,082.88	9,100.10	9,082.98	22.93	22.92	101.27	876.24	836.89	39.35	22.269	0		
9,200.00	9,182.88	9,200.10	9,182.98	23.12	23.11	101.27	876.24	836.46	39.78	22.029	0		
9,255.51	9,238.39	9,255.61	9,238.49	23.23	23.22	101.27	876.24	836.23	40.02	21.897	0		
9,300.00	9,282.88	9,293.51	9,276.38	23.31	23.29	101.29	876.34	836.15	40.19	21.805	0		
9,400.00	9,382.88	9,366.18	9,348.50	23.51	23.41	101.83	878.64	838.12	40.52	21.683	0		
9,500.00	9,482.88	9,434.84	9,414.75	23.70	23.53	102.96	884.39	843.56	40.83	21.660	0		
9,578.00	9,560.88	9,484.15	9,460.40	23.85	23.62	104.13	891.76	850.70	41.06	21.716	0		
9,600.00	9,582.87	9,500.00	9,474.64	23.89	23.66	-75.50	894.25	853.11	41.13	21.741	0		
9,625.00	9,607.80	9,512.46	9,485.67	23.92	23.68	-74.86	897.04	855.85	41.19	21.778	0		
9,650.00	9,632.60	9,525.00	9,496.61	23.95	23.71	-74.25	899.81	858.57	41.24	21.820	0		
9,675.00	9,657.21	9,542.32	9,511.45	23.98	23.75	-73.55	902.51	861.22	41.29	21.860	0		
9,700.00	9,681.55	9,557.17	9,523.90	24.00	23.79	-72.94	905.15	863.82	41.32	21.905	0		
9,725.00	9,705.56	9,575.00	9,538.52	24.02	23.83	-72.30	907.71	866.35	41.35	21.950	0		
9,750.00	9,729.18	9,586.71	9,547.91	24.04	23.86	-71.81	910.15	868.78	41.37	22.000	0		
9,775.00	9,752.33	9,600.00	9,558.35	24.06	23.90	-71.32	912.49	871.11	41.38	22.051	0		
9,800.00	9,774.96	9,616.09	9,570.69	24.07	23.95	-70.83	914.70	873.31	41.39	22.098	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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							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		
9,825.00	9,797.01	9,630.73	9,581.60	24.08	23.99	-70.39	916.78	875.38	41.40	22.144	0			
9,850.00	9,818.40	9,650.00	9,595.49	24.09	24.06	-69.93	918.72	877.31	41.42	22.183	0			
9,875.00	9,839.09	9,659.91	9,602.43	24.10	24.09	-69.62	920.47	879.05	41.42	22.224	0			
9,900.00	9,859.02	9,675.00	9,612.70	24.12	24.15	-69.29	922.07	880.64	41.43	22.254	0			
9,925.00	9,878.13	9,689.01	9,621.92	24.13	24.21	-69.01	923.49	882.03	41.46	22.275	0			
9,950.00	9,896.37	9,700.00	9,628.94	24.14	24.25	-68.78	924.74	883.26	41.48	22.292	0			
9,975.00	9,913.69	9,718.03	9,640.01	24.16	24.33	-68.55	925.78	884.23	41.55	22.279	0			
10,000.00	9,930.04	9,732.52	9,648.52	24.18	24.40	-68.39	926.64	885.01	41.63	22.258	0			
10,025.00	9,945.38	9,750.00	9,658.31	24.20	24.50	-68.25	927.31	885.56	41.75	22.211	0			
10,050.00	9,959.67	9,761.48	9,664.45	24.23	24.56	-68.18	927.76	885.89	41.87	22.159	0			
10,075.00	9,972.86	9,775.00	9,671.37	24.27	24.64	-68.14	928.02	885.99	42.03	22.082	0			
10,100.00	9,984.93	9,790.42	9,678.87	24.31	24.74	-68.13	928.07	885.83	42.24	21.972	0			
10,125.00	9,995.83	9,800.00	9,683.30	24.37	24.80	-68.16	927.94	885.50	42.44	21.866	0			
10,150.00	10,005.54	9,819.38	9,691.74	24.45	24.94	-68.25	927.57	884.80	42.77	21.690	0			
10,175.00	10,014.04	9,833.86	9,697.59	24.54	25.05	-68.37	927.01	883.92	43.09	21.511	0			
10,200.00	10,021.29	9,850.00	9,703.63	24.66	25.18	-68.54	926.26	882.78	43.48	21.301	0			
10,225.00	10,027.27	9,862.86	9,708.08	24.80	25.29	-68.73	925.31	881.42	43.89	21.084	0			
10,250.00	10,031.98	9,875.00	9,711.97	24.98	25.40	-68.95	924.18	879.86	44.32	20.853	0			
10,275.00	10,035.40	9,891.93	9,716.92	25.18	25.57	-69.26	922.86	878.00	44.86	20.571	0			
10,300.00	10,037.52	9,906.49	9,720.71	25.42	25.72	-69.58	921.36	875.95	45.41	20.288	0			
10,321.50	10,038.30	9,919.03	9,723.63	25.65	25.85	-69.88	919.94	874.02	45.92	20.033	0			
10,343.33	10,038.59	9,931.84	9,726.28	25.86	25.99	-70.03	918.55	872.25	46.30	19.839	0			
10,400.00	10,039.37	9,965.66	9,731.66	26.43	26.40	-70.32	915.92	868.58	47.35	19.345	0			
10,478.40	10,040.44	10,013.26	9,735.20	27.59	27.04	-70.50	914.61	865.29	49.32	18.544	0			
10,500.00	10,040.73	10,028.04	9,735.35	27.93	27.25	-70.49	914.70	864.81	49.89	18.334	0			
10,600.00	10,042.10	10,128.01	9,735.57	29.71	28.86	-70.43	915.45	862.07	53.38	17.151	0			
10,700.00	10,043.46	10,228.00	9,735.79	31.71	30.71	-70.37	916.20	858.99	57.21	16.016	0			
10,800.00	10,044.83	10,328.00	9,736.01	33.87	32.75	-70.32	916.95	855.62	61.33	14.951	0			
10,900.00	10,046.19	10,427.99	9,736.23	36.16	34.95	-70.26	917.70	852.00	65.70	13.969	0			
11,000.00	10,047.56	10,527.98	9,736.45	38.56	37.28	-70.20	918.45	848.20	70.25	13.074	0			
11,100.00	10,048.92	10,627.98	9,736.67	41.04	39.70	-70.14	919.21	844.24	74.97	12.261	0			
11,200.00	10,050.29	10,727.97	9,736.89	43.60	42.21	-70.08	919.96	840.15	79.81	11.527	0			
11,300.00	10,051.65	10,827.96	9,737.11	46.22	44.79	-70.02	920.71	835.96	84.76	10.863	0			
11,400.00	10,053.02	10,927.95	9,737.33	48.88	47.42	-69.96	921.47	831.68	89.79	10.262	0			
11,500.00	10,054.38	11,027.95	9,737.55	51.59	50.10	-69.90	922.23	827.33	94.90	9.718	0			
11,600.00	10,055.75	11,127.94	9,737.77	54.33	52.82	-69.85	922.99	822.92	100.07	9.224	0			
11,700.00	10,057.12	11,227.93	9,737.99	57.10	55.57	-69.79	923.74	818.46	105.29	8.774	0			
11,800.00	10,058.48	11,327.92	9,738.21	59.90	58.36	-69.73	924.50	813.95	110.55	8.363	0			
11,900.00	10,059.85	11,427.92	9,738.43	62.72	61.16	-69.67	925.26	809.42	115.85	7.987	0			
12,000.00	10,061.21	11,527.91	9,738.65	65.56	63.99	-69.61	926.03	804.85	121.18	7.642	0			
12,100.00	10,062.58	11,627.90	9,738.87	68.42	66.84	-69.55	926.79	800.25	126.54	7.324	0			
12,200.00	10,063.94	11,727.90	9,739.09	71.29	69.70	-69.50	927.55	795.64	131.92	7.031	0			
12,300.00	10,065.31	11,827.89	9,739.31	74.18	72.58	-69.44	928.32	791.00	137.32	6.760	0			
12,400.00	10,066.67	11,927.88	9,739.53	77.08	75.47	-69.38	929.08	786.35	142.74	6.509	0			
12,500.00	10,068.04	12,027.87	9,739.75	79.98	78.37	-69.32	929.85	781.68	148.17	6.276	0			
12,600.00	10,069.40	12,127.87	9,739.97	82.90	81.28	-69.27	930.62	777.00	153.61	6.058	0			
12,700.00	10,070.77	12,227.86	9,740.19	85.83	84.21	-69.21	931.39	772.32	159.07	5.855	0			
12,800.00	10,072.13	12,327.85	9,740.41	88.76	87.14	-69.15	932.15	767.62	164.53	5.665	0			
12,900.00	10,073.50	12,427.84	9,740.63	91.70	90.07	-69.09	932.92	762.92	170.01	5.488	0			
13,000.00	10,074.86	12,527.84	9,740.85	94.65	93.02	-69.04	933.70	758.21	175.49	5.321	0			
13,100.00	10,076.23	12,627.83	9,741.07	97.60	95.96	-68.98	934.47	753.50	180.97	5.164	0			
13,200.00	10,077.59	12,727.82	9,741.29	100.56	98.92	-68.92	935.24	748.78	186.46	5.016	0			
13,300.00	10,078.96	12,827.81	9,741.51	103.52	101.88	-68.87	936.02	744.06	191.96	4.876	0			
13,400.00	10,080.32	12,927.81	9,741.73	106.49	104.84	-68.81	936.79	739.33	197.46	4.744	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 108H - 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	
13,500.00	10,081.69	13,027.80	9,741.95	109.46	107.81	-68.75	937.57	734.61	202.96	4.619	0		
13,600.00	10,083.05	13,127.79	9,742.17	112.43	110.79	-68.70	938.34	729.88	208.46	4.501	0		
13,700.00	10,084.42	13,227.79	9,742.39	115.41	113.76	-68.64	939.12	725.15	213.97	4.389	0		
13,800.00	10,085.78	13,327.78	9,742.61	118.39	116.74	-68.58	939.90	720.42	219.48	4.282	0		
13,900.00	10,087.15	13,427.77	9,742.83	121.38	119.72	-68.53	940.68	715.69	224.99	4.181	0		
14,000.00	10,088.51	13,527.76	9,743.05	124.36	122.71	-68.47	941.46	710.96	230.49	4.085	0		
14,100.00	10,089.88	13,627.76	9,743.27	127.35	125.70	-68.41	942.24	706.24	236.00	3.992	0		
14,200.00	10,091.24	13,727.75	9,743.49	130.34	128.69	-68.36	943.02	701.51	241.51	3.905	0		
14,300.00	10,092.61	13,827.74	9,743.71	133.34	131.68	-68.30	943.80	696.78	247.02	3.821	0		
14,400.00	10,093.97	13,927.73	9,743.93	136.33	134.67	-68.25	944.59	692.06	252.53	3.741	0		
14,500.00	10,095.34	14,027.73	9,744.15	139.33	137.67	-68.19	945.37	687.34	258.04	3.664	0		
14,600.00	10,096.70	14,127.72	9,744.37	142.33	140.67	-68.13	946.16	682.62	263.54	3.590	0		
14,700.00	10,098.07	14,227.71	9,744.59	145.33	143.67	-68.08	946.95	677.90	269.05	3.520	0		
14,800.00	10,099.43	14,327.71	9,744.81	148.33	146.67	-68.02	947.73	673.18	274.55	3.452	0		
14,900.00	10,100.80	14,427.70	9,745.03	151.34	149.67	-67.97	948.52	668.47	280.05	3.387	0		
15,000.00	10,102.16	14,527.69	9,745.25	154.34	152.68	-67.91	949.31	663.76	285.55	3.324	0		
15,100.00	10,103.53	14,627.68	9,745.47	157.35	155.68	-67.86	950.10	659.05	291.05	3.264	0		
15,200.00	10,104.89	14,727.68	9,745.69	160.36	158.69	-67.80	950.89	654.35	296.54	3.207	0		
15,300.00	10,106.26	14,827.67	9,745.91	163.37	161.70	-67.75	951.68	649.65	302.04	3.151	0		
15,400.00	10,107.62	14,927.66	9,746.12	166.38	164.71	-67.69	952.48	644.95	307.53	3.097	0		
15,500.00	10,108.99	15,027.65	9,746.34	169.39	167.72	-67.64	953.27	640.25	313.02	3.045	0		
15,600.00	10,110.36	15,127.65	9,746.56	172.40	170.73	-67.58	954.06	635.56	318.50	2.995	0		
15,700.00	10,111.72	15,227.64	9,746.78	175.41	173.74	-67.53	954.86	630.87	323.99	2.947	0		
15,800.00	10,113.09	15,327.63	9,747.00	178.43	176.76	-67.47	955.66	626.19	329.47	2.901	0		
15,900.00	10,114.45	15,427.62	9,747.22	181.44	179.77	-67.42	956.45	621.51	334.95	2.856	0		
16,000.00	10,115.82	15,527.62	9,747.44	184.46	182.79	-67.36	957.25	616.83	340.42	2.812	0		
16,100.00	10,117.18	15,627.61	9,747.66	187.48	185.80	-67.31	958.05	612.16	345.90	2.770	0		
16,200.00	10,118.55	15,727.60	9,747.88	190.49	188.82	-67.26	958.85	607.49	351.36	2.729	0		
16,300.00	10,119.91	15,827.60	9,748.10	193.51	191.84	-67.20	959.65	602.82	356.83	2.689	0		
16,400.00	10,121.28	15,927.59	9,748.32	196.53	194.86	-67.15	960.45	598.16	362.30	2.651	0		
16,500.00	10,122.64	16,027.58	9,748.54	199.55	197.88	-67.09	961.25	593.50	367.76	2.614	0		
16,600.00	10,124.01	16,127.57	9,748.76	202.57	200.90	-67.04	962.06	588.85	373.21	2.578	0		
16,700.00	10,125.37	16,227.57	9,748.98	205.59	203.92	-66.99	962.86	584.20	378.67	2.543	0		
16,800.00	10,126.74	16,327.56	9,749.20	208.61	206.94	-66.93	963.67	579.55	384.12	2.509	0		
16,900.00	10,128.10	16,427.55	9,749.42	211.63	209.96	-66.88	964.47	574.91	389.56	2.476	0		
17,000.00	10,129.47	16,527.54	9,749.64	214.65	212.98	-66.83	965.28	570.27	395.01	2.444	0		
17,100.00	10,130.83	16,627.54	9,749.86	217.68	216.00	-66.77	966.09	565.64	400.45	2.413	0		
17,200.00	10,132.20	16,727.53	9,750.08	220.70	219.02	-66.72	966.89	561.01	405.89	2.382	0		
17,300.00	10,133.56	16,827.52	9,750.30	223.72	222.05	-66.67	967.70	556.38	411.32	2.353	0		
17,400.00	10,134.93	16,927.52	9,750.52	226.75	225.07	-66.61	968.51	551.76	416.75	2.324	0		
17,500.00	10,136.29	17,027.51	9,750.74	229.77	228.10	-66.56	969.32	547.15	422.18	2.296	0		
17,602.95	10,137.70	17,130.48	9,750.97	232.88	230.98	-66.51	970.16	542.60	427.55	2.269	0		
17,625.14	10,138.00	17,144.06	9,751.00	233.55	231.28	-66.50	970.38	541.96	428.42	2.265	0		
17,626.12	10,138.01	17,144.06	9,751.00	233.58	231.28	-66.50	970.39	541.95	428.44	2.265	0		SF

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

Devon Energy

Anticollision Risk Report

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Reference Well: Thistle Unit 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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						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		
0.00	0.00	0.00	0.00	0.00	0.00	89.62	50.03					0	
100.00	100.00	99.00	99.00	0.09	0.09	89.62	50.02	49.85	0.17	292.374	0		
200.00	200.00	199.00	199.00	0.31	0.31	89.62	50.02	49.40	0.62	80.780	0		
300.00	300.00	299.00	299.00	0.54	0.53	89.62	50.02	48.95	1.07	46.803	0		
400.00	400.00	399.00	399.00	0.76	0.76	89.62	50.02	48.50	1.52	32.946	0		
500.00	500.00	499.00	499.00	0.99	0.98	89.62	50.02	48.05	1.97	25.420	0		
600.00	600.00	599.00	599.00	1.21	1.21	89.62	50.02	47.60	2.42	20.692	0		
700.00	700.00	699.00	699.00	1.43	1.43	89.62	50.02	47.15	2.87	17.448	0		
800.00	800.00	799.00	799.00	1.66	1.66	89.62	50.02	46.70	3.32	15.083	0		
900.00	900.00	899.00	899.00	1.88	1.88	89.62	50.02	46.26	3.77	13.282	0		
1,000.00	1,000.00	999.00	999.00	2.11	2.11	89.62	50.02	45.81	4.22	11.866	0		
1,100.00	1,100.00	1,099.00	1,099.00	2.33	2.33	89.62	50.02	45.36	4.67	10.723	0		
1,200.00	1,200.00	1,199.00	1,199.00	2.56	2.56	89.62	50.02	44.91	5.11	9.780	0		
1,300.00	1,300.00	1,299.00	1,299.00	2.78	2.78	89.62	50.02	44.46	5.56	8.990	0		
1,400.00	1,400.00	1,399.00	1,399.00	3.01	3.01	89.62	50.02	44.01	6.01	8.318	0		
1,500.00	1,500.00	1,499.00	1,499.00	3.23	3.23	89.62	50.02	43.56	6.46	7.739	0		
1,600.00	1,600.00	1,599.00	1,599.00	3.46	3.46	89.62	50.02	43.11	6.91	7.236	0		
1,700.00	1,700.00	1,699.00	1,699.00	3.68	3.68	89.62	50.02	42.66	7.36	6.794	0		
1,800.00	1,800.00	1,799.00	1,799.00	3.91	3.90	89.62	50.02	42.21	7.81	6.403	0		
1,900.00	1,900.00	1,899.00	1,899.00	4.13	4.13	89.62	50.02	41.76	8.26	6.055	0		
2,000.00	2,000.00	1,999.00	1,999.00	4.36	4.35	89.62	50.02	41.31	8.71	5.742	0		
2,100.00	2,100.00	2,099.00	2,099.00	4.58	4.58	89.62	50.02	40.86	9.16	5.461	0		
2,200.00	2,200.00	2,199.00	2,199.00	4.81	4.80	89.62	50.02	40.41	9.61	5.205	0		
2,300.00	2,300.00	2,299.00	2,299.00	5.03	5.03	89.62	50.02	39.96	10.06	4.973	0		
2,400.00	2,400.00	2,399.00	2,399.00	5.26	5.25	89.62	50.02	39.51	10.51	4.760	0		
2,500.00	2,500.00	2,499.00	2,499.00	5.48	5.48	89.62	50.02	39.06	10.96	4.565	0		
2,600.00	2,600.00	2,599.00	2,599.00	5.71	5.70	89.62	50.02	38.61	11.41	4.385	0		
2,700.00	2,700.00	2,699.00	2,699.00	5.93	5.93	89.62	50.02	38.16	11.86	4.219	0		
2,800.00	2,800.00	2,799.00	2,799.00	6.15	6.15	89.62	50.02	37.71	12.31	4.064	0		
2,900.00	2,900.00	2,899.00	2,899.00	6.38	6.38	89.62	50.02	37.26	12.76	3.921	0		
3,000.00	3,000.00	2,999.00	2,999.00	6.60	6.60	89.62	50.02	36.82	13.21	3.788	0		
3,100.00	3,100.00	3,099.00	3,099.00	6.83	6.83	89.62	50.02	36.37	13.66	3.663	0		
3,200.00	3,200.00	3,199.00	3,199.00	7.05	7.05	89.62	50.02	35.92	14.11	3.546	0		
3,300.00	3,300.00	3,299.00	3,299.00	7.28	7.28	89.62	50.02	35.47	14.55	3.437	0		
3,400.00	3,400.00	3,399.00	3,399.00	7.50	7.50	89.62	50.02	35.02	15.00	3.334	0		
3,500.00	3,500.00	3,499.00	3,499.00	7.73	7.73	89.62	50.02	34.57	15.45	3.237	0	CC, ES	
3,600.00	3,600.00	3,598.17	3,598.16	7.94	7.94	159.64	51.64	35.76	15.88	3.252	0		
3,700.00	3,699.96	3,697.17	3,697.13	8.16	8.15	159.67	56.52	40.23	16.28	3.471	0		
3,800.00	3,799.86	3,795.85	3,795.72	8.37	8.36	159.70	64.65	47.97	16.69	3.875	0		
3,900.00	3,899.68	3,894.07	3,893.76	8.59	8.58	159.72	76.02	58.94	17.08	4.450	0		
4,000.00	3,999.37	3,991.67	3,991.06	8.82	8.80	159.74	90.61	73.13	17.48	5.184	0		
4,100.00	4,098.99	4,090.20	4,089.22	9.06	9.04	159.77	106.93	89.04	17.89	5.976	0		
4,200.00	4,198.60	4,188.86	4,187.51	9.31	9.28	159.79	123.26	104.94	18.31	6.730	0		
4,300.00	4,298.22	4,287.52	4,285.79	9.56	9.53	159.80	139.58	120.85	18.74	7.450	0		
4,400.00	4,397.84	4,386.18	4,384.07	9.82	9.79	159.82	155.91	136.75	19.16	8.137	0		
4,500.00	4,497.46	4,484.83	4,482.35	10.09	10.05	159.83	172.23	152.64	19.59	8.793	0		
4,600.00	4,597.08	4,583.49	4,580.64	10.36	10.31	159.84	188.56	168.54	20.02	9.419	0		
4,700.00	4,696.70	4,682.15	4,678.92	10.63	10.58	159.84	204.88	184.43	20.45	10.018	0		
4,800.00	4,796.32	4,780.81	4,777.20	10.91	10.85	159.85	221.21	200.32	20.89	10.591	0		
4,900.00	4,895.94	4,879.47	4,875.49	11.19	11.13	159.86	237.53	216.21	21.32	11.140	0		
5,000.00	4,995.56	4,978.13	4,973.77	11.47	11.41	159.86	253.86	232.10	21.76	11.665	0		
5,100.00	5,095.18	5,076.78	5,072.05	11.76	11.69	159.87	270.18	247.98	22.20	12.169	0		
5,200.00	5,194.80	5,175.44	5,170.34	12.05	11.98	159.87	286.51	263.86	22.64	12.652	0		
5,300.00	5,294.42	5,274.10	5,268.62	12.34	12.26	159.87	302.83	279.74	23.09	13.116	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 119H - 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	
5,400.00	5,394.04	5,372.76	5,366.90	12.64	12.56	159.88	319.16	295.62	23.54	13.561	0		
5,500.00	5,493.66	5,471.42	5,465.19	12.93	12.85	159.88	335.48	311.50	23.98	13.989	0		
5,600.00	5,593.28	5,570.08	5,563.47	13.23	13.15	159.88	351.81	327.37	24.43	14.400	0		
5,700.00	5,692.90	5,668.74	5,661.75	13.54	13.44	159.88	368.13	343.25	24.88	14.795	0		
5,800.00	5,792.52	5,767.39	5,760.03	13.84	13.74	159.88	384.46	359.12	25.33	15.176	0		
5,900.00	5,892.14	5,866.05	5,858.32	14.15	14.04	159.89	400.78	374.99	25.79	15.543	0		
6,000.00	5,991.76	5,964.71	5,956.60	14.46	14.35	159.89	417.11	390.87	26.24	15.896	0		
6,100.00	6,091.37	6,063.37	6,054.88	14.77	14.65	159.89	433.43	406.74	26.69	16.237	0		
6,200.00	6,190.99	6,162.03	6,153.17	15.08	14.96	159.89	449.76	422.60	27.15	16.565	0		
6,300.00	6,290.61	6,260.69	6,251.45	15.39	15.27	159.89	466.08	438.47	27.61	16.882	0		
6,400.00	6,390.23	6,359.35	6,349.73	15.70	15.58	159.89	482.41	454.34	28.07	17.189	0		
6,500.00	6,489.85	6,458.00	6,448.02	16.02	15.89	159.89	498.73	470.21	28.52	17.485	0		
6,600.00	6,589.47	6,556.66	6,546.30	16.34	16.20	159.90	515.05	486.07	28.98	17.770	0		
6,700.00	6,689.09	6,655.32	6,644.58	16.65	16.51	159.90	531.38	501.94	29.44	18.047	0		
6,800.00	6,788.71	6,753.98	6,742.87	16.97	16.82	159.90	547.70	517.80	29.91	18.314	0		
6,900.00	6,888.33	6,852.64	6,841.15	17.29	17.14	159.90	564.03	533.66	30.37	18.573	0		
7,000.00	6,987.95	6,951.30	6,939.43	17.61	17.46	159.90	580.35	549.52	30.83	18.824	0		
7,100.00	7,087.57	7,049.95	7,037.71	17.93	17.77	159.90	596.68	565.39	31.29	19.067	0		
7,200.00	7,187.19	7,148.61	7,136.00	18.25	18.09	159.90	613.00	581.25	31.76	19.302	0		
7,300.00	7,286.81	7,247.27	7,234.28	18.58	18.41	159.90	629.33	597.11	32.22	19.531	0		
7,400.00	7,386.43	7,345.93	7,332.56	18.90	18.73	159.90	645.65	612.97	32.69	19.752	0		
7,500.00	7,486.05	7,444.59	7,430.85	19.23	19.05	159.90	661.98	628.82	33.15	19.967	0		
7,600.00	7,585.67	7,543.25	7,529.13	19.55	19.37	159.90	678.30	644.68	33.62	20.175	0		
7,700.00	7,685.29	7,641.91	7,627.41	19.88	19.69	159.90	694.63	660.54	34.09	20.378	0		
7,800.00	7,784.91	7,740.56	7,725.70	20.20	20.01	159.91	710.95	676.40	34.56	20.574	0		
7,900.00	7,884.53	7,839.22	7,823.98	20.53	20.33	159.91	727.28	692.25	35.02	20.765	0		
8,000.00	7,984.14	7,937.88	7,922.26	20.86	20.65	159.91	743.60	708.11	35.49	20.951	0		
8,100.00	8,083.80	8,039.04	8,023.04	21.12	20.96	159.92	759.47	723.51	35.95	21.123	0		
8,200.00	8,183.53	8,144.64	8,128.31	21.32	21.21	159.94	773.83	737.45	36.38	21.271	0		
8,300.00	8,283.31	8,250.61	8,234.02	21.52	21.42	159.95	786.53	749.74	36.79	21.379	0		
8,400.00	8,383.15	8,356.90	8,340.11	21.71	21.63	159.95	797.54	760.35	37.20	21.442	0		
8,500.00	8,483.03	8,463.47	8,446.55	21.90	21.83	159.96	806.88	769.28	37.60	21.460	0		
8,600.00	8,582.96	8,570.28	8,553.26	22.08	22.03	159.97	814.52	776.52	38.00	21.435	0		
8,700.00	8,682.91	8,677.28	8,660.20	22.26	22.22	159.97	820.47	782.08	38.40	21.369	0		
8,800.00	8,782.89	8,784.42	8,767.31	22.43	22.41	159.97	824.73	785.94	38.79	21.263	0		
8,900.00	8,882.88	8,891.65	8,874.53	22.60	22.59	159.98	827.29	788.11	39.17	21.118	0		
9,000.00	8,982.88	8,998.93	8,981.80	22.76	22.76	89.98	828.14	788.59	39.56	20.936	0		
9,100.00	9,082.88	9,099.00	9,081.88	22.93	22.93	89.98	828.14	788.19	39.95	20.728	0		
9,200.00	9,182.88	9,199.00	9,181.88	23.12	23.12	89.98	828.14	787.77	40.38	20.510	0		
9,300.00	9,282.88	9,299.00	9,281.88	23.31	23.31	89.98	828.14	787.34	40.80	20.296	0		
9,400.00	9,382.88	9,399.00	9,381.88	23.51	23.50	89.98	828.14	786.91	41.23	20.086	0		
9,500.00	9,482.88	9,499.00	9,481.88	23.70	23.70	89.98	828.14	786.49	41.66	19.880	0		
9,578.00	9,560.88	9,577.00	9,559.88	23.85	23.85	89.98	828.14	786.15	41.99	19.723	0		
9,600.00	9,582.87	9,598.94	9,581.81	23.89	23.88	-90.36	828.15	786.08	42.07	19.684	0		
9,625.00	9,607.80	9,623.87	9,606.68	23.92	23.92	-90.36	828.16	786.02	42.15	19.649	0		
9,650.00	9,632.60	9,648.81	9,631.44	23.95	23.95	-90.37	828.19	785.98	42.21	19.620	0		
9,675.00	9,657.21	9,673.75	9,656.01	23.98	23.98	-90.37	828.22	785.96	42.26	19.597	0		
9,700.00	9,681.55	9,698.70	9,680.33	24.00	24.00	-90.38	828.27	785.96	42.31	19.578	0		
9,725.00	9,705.56	9,723.65	9,704.33	24.02	24.02	-90.38	828.32	785.98	42.34	19.563	0		
9,750.00	9,729.18	9,748.62	9,727.95	24.04	24.04	-90.38	828.39	786.02	42.37	19.551	0		
9,775.00	9,752.33	9,773.58	9,751.12	24.06	24.06	-90.38	828.46	786.06	42.40	19.540	0		
9,800.00	9,774.96	9,798.56	9,773.78	24.07	24.07	-90.38	828.55	786.12	42.43	19.529	0		
9,825.00	9,797.01	9,823.54	9,795.86	24.08	24.08	-90.37	828.64	786.18	42.46	19.517	0		
9,850.00	9,818.40	9,848.53	9,817.31	24.09	24.09	-90.37	828.74	786.25	42.49	19.502	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 119H - Wellbore #1 - Plan 1

Survey Program: 0-MWD

Offset Site Error: 0.00 ft

Offset Well Error: 0.00 ft

Reference		Offset		Semi Major Axis		Distance						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)	Minimum Separation (ft)	Separation Factor				
9,875.00	9,839.09	9,873.52	9,838.07	24.10	24.10	-90.37	828.85	786.31	42.54	19.483	0			
9,900.00	9,859.02	9,898.52	9,858.08	24.12	24.11	-90.36	828.97	786.37	42.60	19.458	0			
9,925.00	9,878.13	9,923.53	9,877.28	24.13	24.12	-90.36	829.10	786.42	42.68	19.424	0			
9,950.00	9,896.37	9,948.54	9,895.61	24.14	24.14	-90.35	829.24	786.45	42.79	19.381	0			
9,975.00	9,913.69	9,973.56	9,913.04	24.16	24.15	-90.34	829.38	786.47	42.91	19.327	0			
10,000.00	9,930.04	9,998.59	9,929.51	24.18	24.17	-90.33	829.53	786.46	43.07	19.260	0			
10,025.00	9,945.38	10,023.63	9,944.97	24.20	24.19	-90.32	829.69	786.43	43.26	19.180	0			
10,050.00	9,959.67	10,048.67	9,959.38	24.23	24.22	-90.31	829.85	786.36	43.48	19.084	0			
10,075.00	9,972.86	10,073.71	9,972.70	24.27	24.26	-90.30	830.02	786.27	43.75	18.973	0			
10,100.00	9,984.93	10,098.77	9,984.90	24.31	24.30	-90.28	830.19	786.14	44.05	18.846	0			
10,125.00	9,995.83	10,123.83	9,995.93	24.37	24.36	-90.27	830.37	785.97	44.40	18.703	0			
10,150.00	10,005.54	10,148.89	10,005.77	24.45	24.43	-90.26	830.55	785.77	44.79	18.544	0			
10,175.00	10,014.04	10,173.96	10,014.39	24.54	24.52	-90.24	830.74	785.52	45.22	18.370	0			
10,200.00	10,021.29	10,199.04	10,021.76	24.66	24.63	-90.23	830.93	785.23	45.70	18.182	0			
10,225.00	10,027.27	10,224.12	10,027.87	24.80	24.77	-90.21	831.12	784.90	46.22	17.981	0			
10,250.00	10,031.98	10,249.21	10,032.69	24.98	24.95	-90.19	831.32	784.53	46.79	17.767	0			
10,275.00	10,035.40	10,274.30	10,036.21	25.18	25.15	-90.18	831.51	784.12	47.40	17.544	0			
10,300.00	10,037.52	10,299.40	10,038.42	25.42	25.39	-90.16	831.71	783.67	48.04	17.312	0			
10,321.50	10,038.30	10,320.99	10,039.27	25.65	25.62	-90.14	831.88	783.25	48.63	17.107	0			
10,343.33	10,038.59	10,342.82	10,039.60	25.86	25.87	-90.14	832.05	782.92	49.14	16.933	0			
10,400.00	10,039.37	10,399.49	10,040.43	26.43	26.62	-90.15	832.50	781.95	50.56	16.466	0			
10,500.00	10,040.73	10,499.49	10,041.91	27.93	28.22	-90.16	833.30	779.34	53.96	15.442	0			
10,600.00	10,042.10	10,599.48	10,043.39	29.71	30.07	-90.16	834.09	776.28	57.81	14.429	0			
10,700.00	10,043.46	10,699.48	10,044.86	31.71	32.12	-90.17	834.89	772.87	62.01	13.463	0			
10,800.00	10,044.83	10,799.48	10,046.34	33.87	34.32	-90.18	835.68	769.17	66.51	12.565	0			
10,900.00	10,046.19	10,899.47	10,047.81	36.16	36.65	-90.19	836.47	765.24	71.24	11.742	0			
11,000.00	10,047.56	10,999.47	10,049.29	38.56	39.07	-90.19	837.27	761.11	76.16	10.994	0			
11,100.00	10,048.92	11,099.47	10,050.76	41.04	41.58	-90.20	838.06	756.82	81.24	10.316	0			
11,200.00	10,050.29	11,199.46	10,052.24	43.60	44.15	-90.21	838.85	752.41	86.44	9.704	0			
11,300.00	10,051.65	11,299.46	10,053.72	46.22	46.78	-90.22	839.65	747.89	91.76	9.150	0			
11,400.00	10,053.02	11,399.46	10,055.19	48.88	49.46	-90.22	840.44	743.28	97.16	8.650	0			
11,500.00	10,054.38	11,499.45	10,056.67	51.59	52.17	-90.23	841.23	738.59	102.64	8.196	0			
11,600.00	10,055.75	11,599.45	10,058.14	54.33	54.92	-90.24	842.03	733.84	108.19	7.783	0			
11,700.00	10,057.12	11,699.45	10,059.62	57.10	57.70	-90.24	842.82	729.03	113.79	7.407	0			
11,800.00	10,058.48	11,799.44	10,061.09	59.90	60.51	-90.25	843.61	724.18	119.43	7.064	0			
11,900.00	10,059.85	11,899.44	10,062.57	62.72	63.33	-90.26	844.41	719.29	125.12	6.749	0			
12,000.00	10,061.21	11,999.44	10,064.05	65.56	66.18	-90.27	845.20	714.36	130.84	6.460	0			
12,100.00	10,062.58	12,099.43	10,065.52	68.42	69.04	-90.27	846.00	709.40	136.59	6.194	0			
12,200.00	10,063.94	12,199.43	10,067.00	71.29	71.92	-90.28	846.79	704.42	142.37	5.948	0			
12,300.00	10,065.31	12,299.43	10,068.47	74.18	74.80	-90.29	847.58	699.41	148.18	5.720	0			
12,400.00	10,066.67	12,399.43	10,069.95	77.08	77.71	-90.30	848.38	694.38	154.00	5.509	0			
12,500.00	10,068.04	12,499.42	10,071.42	79.98	80.62	-90.30	849.17	689.33	159.84	5.313	0			
12,600.00	10,069.40	12,599.42	10,072.90	82.90	83.54	-90.31	849.96	684.26	165.70	5.129	0			
12,700.00	10,070.77	12,699.42	10,074.38	85.83	86.46	-90.32	850.76	679.18	171.58	4.958	0			
12,800.00	10,072.13	12,799.41	10,075.85	88.76	89.40	-90.32	851.55	674.08	177.47	4.798	0			
12,900.00	10,073.50	12,899.41	10,077.33	91.70	92.34	-90.33	852.35	668.98	183.37	4.648	0			
13,000.00	10,074.86	12,999.41	10,078.80	94.65	95.29	-90.34	853.14	663.86	189.28	4.507	0			
13,100.00	10,076.23	13,099.40	10,080.28	97.60	98.24	-90.35	853.93	658.73	195.21	4.375	0			
13,200.00	10,077.59	13,199.40	10,081.75	100.56	101.20	-90.35	854.73	653.59	201.14	4.249	0			
13,300.00	10,078.96	13,299.40	10,083.23	103.52	104.16	-90.36	855.52	648.44	207.08	4.131	0			
13,400.00	10,080.32	13,399.39	10,084.71	106.49	107.13	-90.37	856.32	643.29	213.03	4.020	0			
13,500.00	10,081.69	13,499.39	10,086.18	109.46	110.10	-90.37	857.11	638.13	218.98	3.914	0			
13,600.00	10,083.05	13,599.39	10,087.66	112.43	113.08	-90.38	857.90	632.96	224.95	3.814	0			
13,700.00	10,084.42	13,699.38	10,089.13	115.41	116.06	-90.39	858.70	627.78	230.91	3.719	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 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 119H - 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	
13,800.00	10,085.78	13,799.38	10,090.61	118.39	119.04	-90.39	859.49	622.60	236.89	3.628	0			
13,900.00	10,087.15	13,899.38	10,092.09	121.38	122.02	-90.40	860.29	617.42	242.87	3.542	0			
14,000.00	10,088.51	13,999.37	10,093.56	124.36	125.01	-90.41	861.08	612.23	248.85	3.460	0			
14,100.00	10,089.88	14,099.37	10,095.04	127.35	128.00	-90.42	861.87	607.03	254.84	3.382	0			
14,200.00	10,091.24	14,199.37	10,096.51	130.34	130.99	-90.42	862.67	601.83	260.83	3.307	0			
14,300.00	10,092.61	14,299.36	10,097.99	133.34	133.98	-90.43	863.46	596.63	266.83	3.236	0			
14,400.00	10,093.97	14,399.36	10,099.46	136.33	136.98	-90.44	864.26	591.43	272.83	3.168	0			
14,500.00	10,095.34	14,499.36	10,100.94	139.33	139.98	-90.44	865.05	586.22	278.83	3.102	0			
14,600.00	10,096.70	14,599.35	10,102.42	142.33	142.98	-90.45	865.84	581.00	284.84	3.040	0			
14,700.00	10,098.07	14,699.35	10,103.89	145.33	145.98	-90.46	866.64	575.79	290.85	2.980	0			
14,800.00	10,099.43	14,799.35	10,105.37	148.33	148.98	-90.46	867.43	570.57	296.86	2.922	0			
14,900.00	10,100.80	14,899.35	10,106.84	151.34	151.98	-90.47	868.23	565.35	302.88	2.867	0			
15,000.00	10,102.16	14,999.34	10,108.32	154.34	154.99	-90.48	869.02	560.13	308.89	2.813	0			
15,100.00	10,103.53	15,099.34	10,109.79	157.35	158.00	-90.48	869.81	554.90	314.91	2.762	0			
15,200.00	10,104.89	15,199.34	10,111.27	160.36	161.00	-90.49	870.61	549.67	320.93	2.713	0			
15,300.00	10,106.26	15,299.33	10,112.75	163.37	164.01	-90.50	871.40	544.44	326.96	2.665	0			
15,400.00	10,107.62	15,399.33	10,114.22	166.38	167.02	-90.51	872.20	539.21	332.98	2.619	0			
15,500.00	10,108.99	15,499.33	10,115.70	169.39	170.04	-90.51	872.99	533.98	339.01	2.575	0			
15,600.00	10,110.36	15,599.32	10,117.17	172.40	173.05	-90.52	873.78	528.74	345.04	2.532	0			
15,700.00	10,111.72	15,699.32	10,118.65	175.41	176.06	-90.53	874.58	523.51	351.07	2.491	0			
15,800.00	10,113.09	15,799.32	10,120.12	178.43	179.08	-90.53	875.37	518.27	357.11	2.451	0			
15,900.00	10,114.45	15,899.31	10,121.60	181.44	182.09	-90.54	876.17	513.03	363.14	2.413	0			
16,000.00	10,115.82	15,999.31	10,123.08	184.46	185.11	-90.55	876.96	507.78	369.18	2.375	0			
16,100.00	10,117.18	16,099.31	10,124.55	187.48	188.12	-90.55	877.76	502.54	375.21	2.339	0			
16,200.00	10,118.55	16,199.30	10,126.03	190.49	191.14	-90.56	878.55	497.30	381.25	2.304	0			
16,300.00	10,119.91	16,299.30	10,127.50	193.51	194.16	-90.57	879.34	492.05	387.29	2.270	0			
16,400.00	10,121.28	16,399.30	10,128.98	196.53	197.18	-90.57	880.14	486.81	393.33	2.238	0			
16,500.00	10,122.64	16,499.29	10,130.45	199.55	200.20	-90.58	880.93	481.56	399.37	2.206	0			
16,600.00	10,124.01	16,599.29	10,131.93	202.57	203.22	-90.59	881.73	476.31	405.42	2.175	0			
16,700.00	10,125.37	16,699.29	10,133.41	205.59	206.24	-90.59	882.52	471.06	411.46	2.145	0			
16,800.00	10,126.74	16,799.28	10,134.88	208.61	209.26	-90.60	883.32	465.81	417.51	2.116	0			
16,900.00	10,128.10	16,899.28	10,136.36	211.63	212.28	-90.61	884.11	460.56	423.55	2.087	0			
17,000.00	10,129.47	16,999.28	10,137.83	214.65	215.30	-90.61	884.90	455.31	429.60	2.060	0			
17,100.00	10,130.83	17,099.27	10,139.31	217.68	218.32	-90.62	885.70	450.05	435.65	2.033	0			
17,200.00	10,132.20	17,199.27	10,140.78	220.70	221.35	-90.63	886.49	444.80	441.70	2.007	0			
17,300.00	10,133.56	17,299.27	10,142.26	223.72	224.37	-90.63	887.29	439.54	447.74	1.982	0			
17,400.00	10,134.93	17,399.27	10,143.74	226.75	227.39	-90.64	888.08	434.29	453.79	1.957	0			
17,500.00	10,136.29	17,499.26	10,145.21	229.77	230.42	-90.65	888.88	429.03	459.85	1.933	0			
17,602.95	10,137.70	17,602.21	10,146.73	232.88	233.53	-90.65	889.69	423.62	466.07	1.909	0			
17,625.14	10,138.00	17,620.43	10,147.00	233.55	233.95	-90.65	889.88	422.72	467.16	1.905	0			
17,626.12	10,138.01	17,620.43	10,147.00	233.58	233.95	-90.65	889.89	422.71	467.18	1.905	0		SF	

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

Devon Energy
Anticollision Risk Report

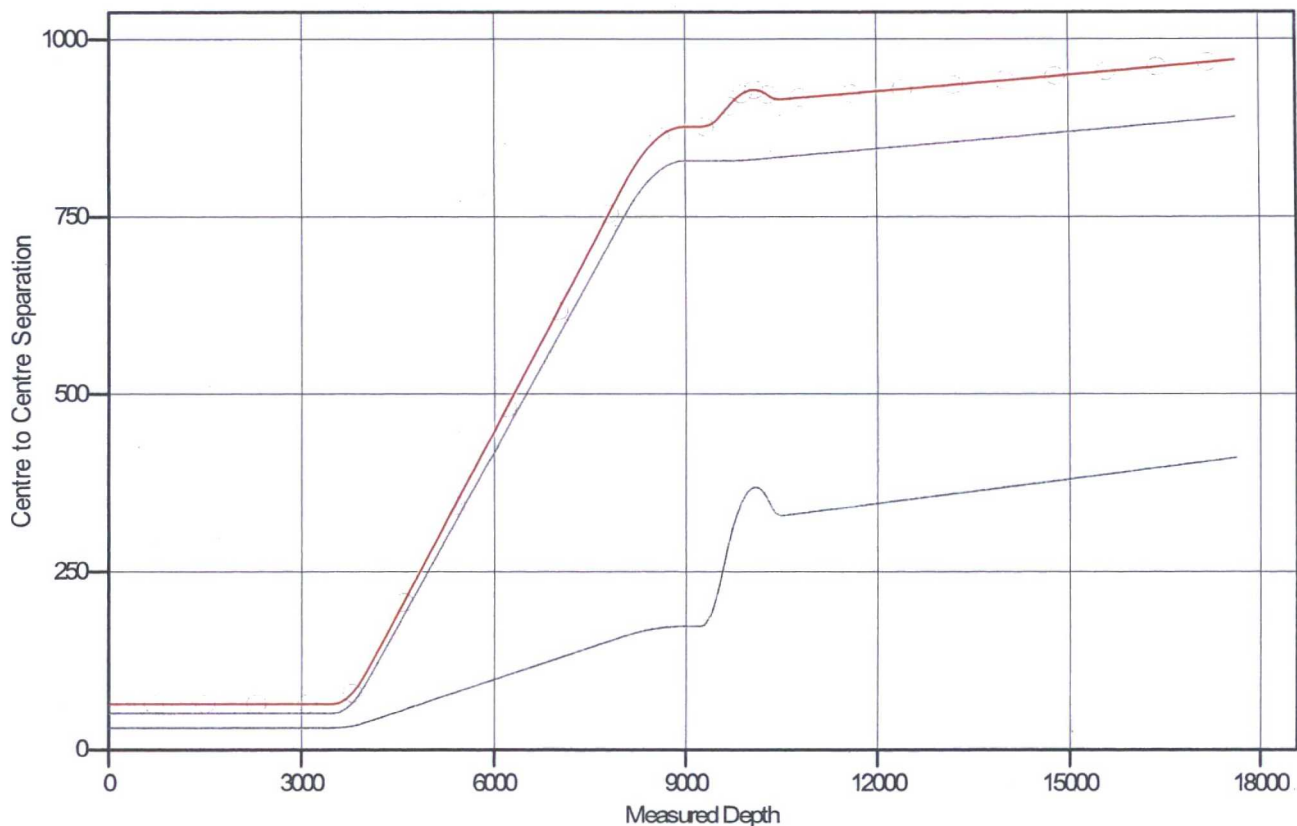
Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 @ 3746.90ft
Offset Depths are relative to Offset Datum
Central Meridian is

Coordinates are relative to: Thistle Unit 121H
Coordinate System is Flat Earth, No Conversions
Grid Convergence at Surface is: 0.00°

Ladder Plot



LEGEND

—+— Thistle Unit 119H, Wellbore #1, Plan 1 V0 —+— Thistle Unit 105H, Wellbore #1, Plan 1 V0 —+— Thistle Unit 108H, Wellbore #1, Plan 1 V0

Devon Energy
Anticollision Risk Report

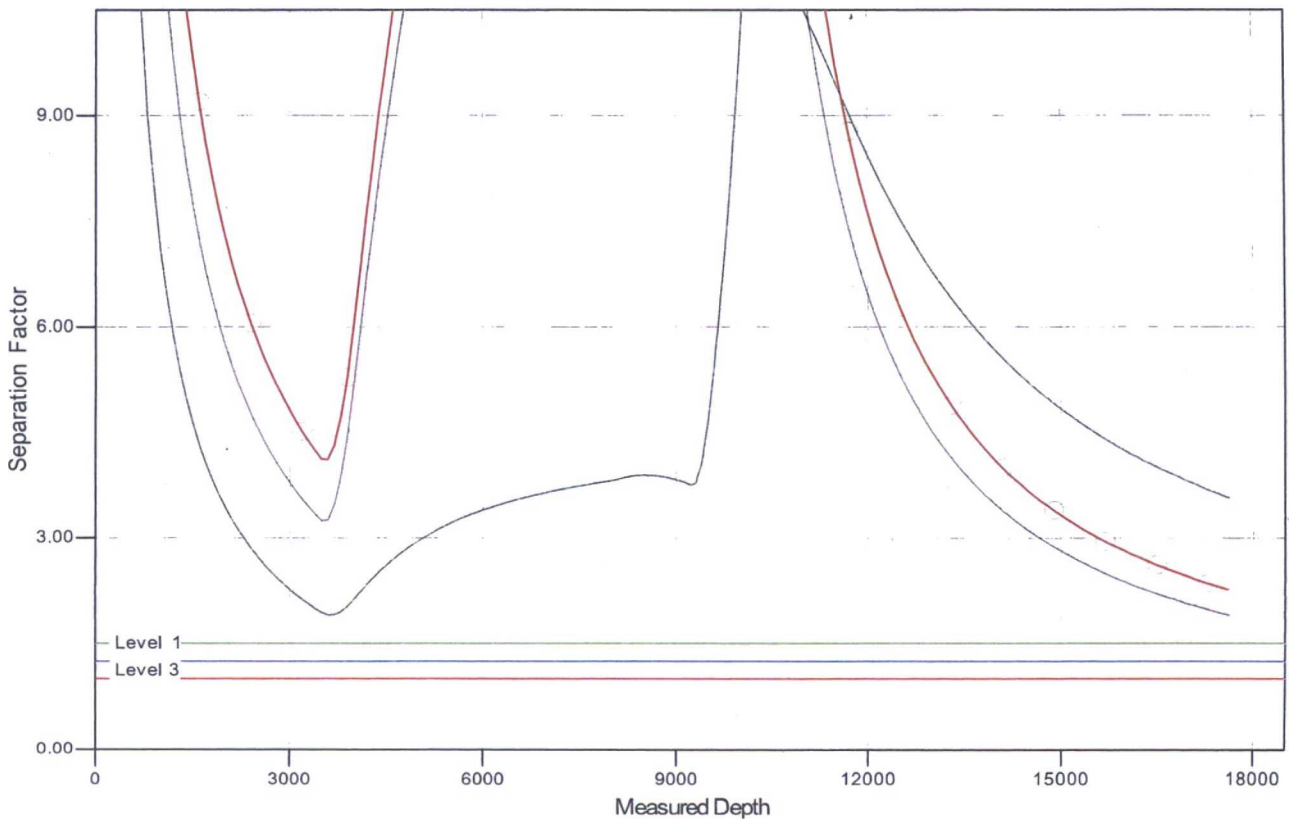
Company: WESTERN DIVISION
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Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 121H
Well Error: 0.00
Reference Wellbore: Wellbore #1
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Local Co-ordinate Reference: Well Thistle Unit 121H
TVD Reference: 1 @ 3746.90ft
MD Reference: 1 @ 3746.90ft
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 @ 3746.90ft
Offset Depths are relative to Offset Datum
Central Meridian is

Coordinates are relative to: Thistle Unit 121H
Coordinate System is Flat Earth, No Conversions
Grid Convergence at Surface is: 0.00°

Separation Factor Plot



LEGEND

Thistle Unit 119H, Wellbore #1, Plan 1 V0 Thistle Unit 105H, Wellbore #1, Plan 1 V0 Thistle Unit 108H, Wellbore #1, Plan 1 V0