

Appendix A. Consequence Result Summary

A.1 Release Rate Modelling and Flash Fire

Table A- 1 presents initial release rates, and the release rate after five minutes after detection and isolation for the operating conditions presented in Table 4-7 of Section 4.5. Five minutes is selected as this is the time to fail a steel beam, pipe or process vessel by direct jet fire impingement [55]. The total release duration is estimated based on the release rate at five minutes post release taking account of process response time of 60 seconds. Both on board the FSRU and at the ORF, response times for F&G detection devices will be short (i.e. typically less than 10 seconds). The total time for detection, isolation, and initiation of depressurisation (where provided) is expected to be completed within 60 seconds. This time is dominated by the time for valves reach their safe state i.e. closed for isolation valve and open for blowdown valves.

Worst case maximum downwind distances for flammable dispersion at the LFL concentration are reported at 1 m above grade at ORF or sea level and also at 14 m above grade at FSRU. Noting worst case results are selected from all release directions (vertical up, vertical down, and horizontal) and weather conditions modelled. In the table, where an isolatable inventory is expected to deplete in less than five minutes, this is indicated by “-”. Where downwind effects are not reached at the reporting height, they are documented as “NR” (“Not Reached”).

Table A- 1: Release Rate and Flammable Dispersion (Flash Fire) Results

Description	Hole Size (mm)	Release Rate (kg/s)		Release Duration (s) after isolation	Max Downwind Dist. to LFL (m)	
		Initial	5 Minutes		ORF / Sea	FSRU
Scenario 1: BOG from cargo tanks via vapour header to cargo machinery room (compressor suction conditions)	10mm	0.01	0.01	1608	NR	3.2
	25mm	0.06	0.01	257	NR	6.3
	50mm	0.25	-	64	NR	10.2
	100mm	1.01	-	16	NR	16.0
	FB	16.18	-	1	NR	45.5
Scenario 2: LNG from cargo tank via liquid header to regasification plant (including cargo spray main, and LNG loading headers)	10mm	1.1	0.1	>3600	NR	12.7
	25mm	6.8	0.5	>3600	62.0	18.9
	50mm	27.0	1.8	>3600	247.7	20.2
	100mm	72.0 ^{Note 1}	6.6	1607	398.0 ^{Note 3}	33.3
	FB	72.0 ^{Note 1}	13.7	402	270.0 ^{Note 3}	NR
Scenario 3: BOG from LD compressors in cargo machinery room for fuel gas or to BOG cooler for reliquefaction (compressor discharge conditions)	10mm	0.1	0.1	>3600	NR	4.4
	25mm	0.5	0.3	979	NR	9.9
	50mm	1.9	0.02	245	NR	17.7
	100mm	7.7	-	61	NR	30.9
	FB	30.9	-	15	NR	52.2

Description	Hole Size (mm)	Release Rate (kg/s)		Release Duration (s) after isolation	Max Downwind Dist. to LFL (m)	
		Initial	5 Minutes		ORF / Sea	FSRU
Scenario 4: LNG from regasification booster pumps	10mm	5.1	0.03	>3600	NR	25.1
	25mm	31.6	0.2	1640.0	118.8	52.0
	50mm	72.0 ^{Note 1}	0.7	410.0	450.6	60.4
	100mm	72.0 ^{Note 1}	2.7	102.5	397.8 ^{Note 3}	33.2
	FB	72.0 ^{Note 1}	10.9	25.6	270.2 ^{Note 3}	NR
Scenario 5: NG from regasification plant to FSRU ESD Valve	10mm	2.1	0.7	900 ^{Note 6}	30.7	13.9
	25mm	13.2	3.6	900 ^{Note 6}	107.0	32.7
	50mm	52.8	7.1	682 ^{Note 6}	244.5	63.9
	100mm	211.3	1.7	269 ^{Note 6}	474.4	129.5
	FB	7605.0	-	38 ^{Note 6}	406.4	324.1
Scenario 6: NG from FSRU ESD Valve to ORF (up to SDV-064001 / SDV-064002) including MLA	10mm	2.1	1.0	2801	111.2	NR
	25mm	13.2	0.7	448	113.5	3.2
	50mm	52.8	-	112	178.5	5.1
	100mm	211.3	-	28	208.0	3.8
	FB	7605.0	-	1	185.6	3.7
Scenario 7: ORF Pipework (from SDV-064001 / SDV-064002 to SDV-064007)	10mm	2.1	0.9	2310	111.2	NR
	25mm	13.2	0.4	370	101.0	3.2
	50mm	52.8	-	92	171.4	5.1
	100mm	211.3	-	23	193.7	3.8
	FB	3380.0	-	1	174.3	3.6
Scenario 8: PKP (from SDV-064007 to MLV-064011) (~300m)	10mm	2.1	1.9	>3600	111.2	NR
	25mm	13.2	7.3	>3600	243.4	3.2
	50mm	52.8	8.7	963	245.5	5.1
	100mm	211.3	0.1	241	370.6	3.8
	FB	4278.0	-	12	395.7	359.0
Scenario 9a: Odourant storage & pipework ^{Note 2}	10mm	1.1	1.1	2323.0	6.9	NR
	25mm	6.7	6.4	372.7	10.4	NR
Scenario 10: Ship Collision	Minor Spill	8.6	NA ^{Note 4}	NA ^{Note 4}	81.7	NR
	Major Spill	33.7	NA ^{Note 4}	NA ^{Note 4}	266.1	NR

Description	Hole Size (mm)	Release Rate (kg/s)		Release Duration (s) after isolation	Max Downwind Dist. to LFL (m)	
		Initial	5 Minutes		ORF / Sea	FSRU
Scenario 11: Ship to Ship Loading Hose Failure	10mm	0.7	NA ^{Note 5}	NA ^{Note 5}	NR	1.4
	25mm	4.5	NA ^{Note 5}	NA ^{Note 5}	34.0	1.6
	50mm	17.8	NA ^{Note 5}	NA ^{Note 5}	128.5	1.6
	100mm	71.4	NA ^{Note 5}	NA ^{Note 5}	597.0	NR
	FB	446.0	NA ^{Note 5}	NA ^{Note 5}	1984.0	NR

Notes:

1. The liquid initial release rate has been limited by the pumped-in rate of 72 kg/s.
2. Scenario is only applicable during odourant SBC changeout (i.e. shipping container side fully open and accessible). During normal operation, LOC will occur within the shipping container which is provided with an activated carbon filter system. Results at the odourant injection conditions (i.e. Scenario 9b) are either very localised or not produced due to the low flow rates limited by the injection pump.
3. Same mass released through a larger hole size generates a gas plume with lower velocity thus lower momentum and shorter distance to reach its steady state.
4. Not applicable as there will be no isolation during a ship collision and subsequent LOC incident therefore release will continue until the tanker is emptied.
5. Liquid release from the system would stop instantaneously once loading hose emergency release couplings activated to isolate the inventory. Therefore release after five minutes is not considered in this study.
6. This inventory will be subject to blowdown once ESD has been activated. Blowdown is designed to take 15 minutes. However, depending on the hole size the inventory may be depleted via the leak hole itself in less time than the time to depressure the inventory.

A.2 Jet Fires

Table A- 2 presents the worst case maximum potential jet fire radiant heat impact distances at 1m above grade at ORF or sea level while Table A- 3 presents worst case maximum potential jet fire radiant heat impact distances at 14 m above grade at FSRU. Noting worst case results are selected from all release directions (vertical up, vertical down, and horizontal) and weather conditions modelled. Impacts based on initial release rate and the release rate after 5 minutes are shown. Jet fires emanating from the FSRU are not expected to directly impinge on any of the berth infrastructure. However, equipment and structures may initially be exposed to radiant heat levels of 23 kW/m². In the table, where an isolatable inventory is expected to deplete in less than five minutes, this is indicated by “-”. Thermal radiation levels not reached at the reporting height are indicated by “NR”.

Table A- 2: Worst Case Jet Fire Results reported at 1m above ORF grade level or sea level

Description	Hole Size	Initial Downwind Impact Distance (m)				5 Min Downwind Impact Distance (m)			
		Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²	Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
Scenario 1: BOG from cargo tanks via vapour	10mm	2.4	NR	NR	NR	2.3	NR	NR	NR
	25mm	5.4	NR	NR	NR	3.0	NR	NR	NR

Description	Hole Size	Initial Downwind Impact Distance (m)				5 Min Downwind Impact Distance (m)			
		Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²	Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
header to cargo machinery room (compressor suction conditions)	50mm	9.8	NR	NR	NR	-	-	-	-
	100mm	17.7	22.9	15.6	NR	-	-	-	-
	FB	57.7	101.9	91.5	63.9	-	-	-	-
Scenario 2: LNG from cargo tank via liquid header to regasification plant (including cargo spray main, and LNG loading headers)	10mm	19.9	26.5	18.9	NR	8.1	NR	NR	NR
	25mm	43.1	72.5	64.4	41.2	17.1	9.8	NR	NR
	50mm	76.9	139.5	125.5	89.6	29.9	41.9	35.9	NR
	100mm	119.5	220.6	197.6	138.2	34.5	50.1	44.0	NR
	FB	59.8	130.6	110.3	64.6	46.3	69.6	62.5	33.5
Scenario 3: BOG from LD compressors in cargo machinery room for fuel gas or to BOG cooler for reliquefaction (compressor discharge conditions)	10mm	4.0	NR	NR	NR	3.9	NR	NR	NR
	25mm	10.2	NR	NR	NR	7.9	NR	NR	NR
	50mm	19.5	20.3	NR	NR	4.8	NR	NR	NR
	100mm	35.7	55.3	48.9	NR	-	-	-	-
	FB	59.8	105.9	93.8	61.7	-	-	-	-
Scenario 4: LNG from Regasification Booster Pumps	10mm	31.2	50.9	45.0	NR	5.6	NR	NR	NR
	25mm	68.8	122.5	110.6	79.9	11.2	NR	NR	NR
	50mm	105.3	194.6	175.6	128.9	11.2	NR	NR	NR
	100mm	119.4	220.5	197.5	138.1	11.6	NR	NR	NR
	FB	59.9	131.2	110.8	64.8	22.0	20.9	11.2	NR
Scenario 5: NG from regasification plant to FSRU ESD Valve	10mm	22.8	26.5	19.7	11.1	14.7	NR	NR	NR
	25mm	44.4	72.2	63.4	40.6	28.3	37.7	32.4	NR
	50mm	74.2	139.6	119.7	85.3	35.6	58.9	52.6	29.1
	100mm	129.3	267.2	228.5	159.9	21.2	31.0	25.1	NR
	FB	570.9	1392.0	1199.0	790.8	-	-	-	-
Scenario 6: NG from FSRU ESD Valve to ORF (up to SDV-064001 / SDV-064002) including MLA	10mm	22.8	35.1	31.4	25.0	16.5	20.9	20.0	17.8
	25mm	45.5	79.5	70.8	51.3	12.6	21.0	19.2	15.0
	50mm	81.3	147.4	131.0	91.0	-	-	-	-
	100mm	145.1	273.0	241.7	167.0	-	-	-	-
	FB	642.1	1394.0	1199.0	793.3	-	-	-	-
	10mm	22.8	35.1	31.4	25.0	15.6	19.7	18.8	16.8
	25mm	45.5	79.5	70.8	51.3	9.9	16.4	15.1	11.9

Description	Hole Size	Initial Downwind Impact Distance (m)				5 Min Downwind Impact Distance (m)			
		Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²	Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
Scenario 7: ORF Pipework (from SDV-064001 / SDV-064002 to SDV-064007)	50mm	81.3	147.4	131.0	91.0	-	-	-	-
	100mm	145.1	273.0	241.7	167.0	-	-	-	-
	FB	459.1	963.9	823.3	558.7	-	-	-	-
Scenario 8: PKP (from SDV-064007 to MLV-064011) (~300m)	10mm	22.8	35.1	31.4	25.0	21.9	28.9	27.4	23.9
	25mm	45.5	79.5	70.8	51.3	36.1	55.4	48.9	41.2
	50mm	81.3	147.4	131.0	91.0	39.0	67.5	61.3	46.3
	100mm	145.1	273.0	241.7	167.0	9.3	14.1	12.9	10.3
	FB	506.2	1073.0	917.8	618.7	-	-	-	-
Scenario 9: Odourant storage & pipework ^{Note 1}	10mm	11.4	23.4	19.7	12.0	9.0	15.7	14.2	10.6
	25mm	24.5	54.4	45.1	24.9	16.6	29.8	26.8	19.5
Scenario 10: Ship Collision	Minor	51.9	88.5	79.4	56.3	No isolation during a ship collision and LoC incident therefore LoC incident will continue until the tanker is emptied.			
	Major	91.1	160.7	143.8	99.7				
Scenario 11: Ship to Ship Loading Hose Failure	10mm	17.5	8.7	NR	NR	-	-	-	-
	25mm	37.6	34.6	26.8	2.5	-	-	-	-
	50mm	67.0	69.8	56.4	27.9	-	-	-	-
	100mm	119.0	134.7	108.4	62.7	-	-	-	-
	1 x FB	173.3	320.2	255.8	130.8	-	-	-	-
	6 x FB	232.1	386.4	308.7	155.9	-	-	-	-

Table A- 3: Worst Case Jet Fire Results reported at FSRU level

Description	Hole Size	Initial Downwind Impact Distance (m)				5 Min Downwind Impact Distance (m)			
		Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²	Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
Scenario 1: BOG from cargo tanks via vapour header to cargo machinery room (compressor suction conditions)	10mm	2.4	3.7	3.4	2.7	2.3	3.6	3.3	2.6
	25mm	5.4	8.6	7.9	6.2	3.0	4.3	4.0	2.6
	50mm	9.8	16.1	14.8	11.6	-	-	-	-
	100mm	17.7	30.2	27.6	21.5	-	-	-	-
	FB	57.7	105.0	95.5	73.2	-	-	-	-
Scenario 2: LNG from cargo tank via liquid	10mm	19.9	33.9	31.0	23.8	17.1	26.6	24.5	18.9
	25mm	43.1	76.9	69.9	53.2	29.9	48.3	44.3	34.3

Description	Hole Size	Initial Downwind Impact Distance (m)				5 Min Downwind Impact Distance (m)			
		Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²	Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
header to regasification plant (including cargo spray main, and LNG loading headers)	50mm	76.9	142.5	129.2	97.6	34.5	56.0	51.4	39.8
	100mm	119.5	224.6	202.7	150.6	46.3	74.5	68.6	54.0
	FB	59.8	129.8	110.5	70.5	3.9	4.5	4.3	2.7
Scenario 3: BOG from LD compressors in cargo machinery room for fuel gas or to BOG cooler for reliquefaction (compressor discharge conditions)	10mm	4.0	4.8	4.5	3.3	7.9	9.4	8.9	7.9
	25mm	10.2	12.7	12.0	10.5	4.8	5.3	5.3	NR
	50mm	19.5	26.8	25.1	21.2	10.6	11.6	11.6	11.6
	100mm	35.7	54.8	50.0	40.6	-	-	-	-
	FB	59.8	106.1	93.1	71.3	-	-	-	-
Scenario 4: LNG from Regasification Booster Pumps	10mm	31.2	54.7	49.9	38.9	5.6	7.7	7.2	4.9
	25mm	68.8	125.2	113.9	87.9	11.2	16.2	15.1	12.2
	50mm	105.3	197.4	179.0	136.4	11.2	15.9	14.8	12.2
	100mm	119.4	224.5	202.6	150.5	11.6	16.0	15.0	12.6
	FB	59.9	130.4	111.0	70.6	22.0	31.7	29.5	23.8
Scenario 5: NG from regasification plant to FSRU ESD Valve	10mm	22.8	30.4	28.8	25.0	35.6	62.6	57.1	44.5
	25mm	44.4	73.2	64.2	51.3	21.2	36.4	33.3	25.9
	50mm	74.2	140.2	121.4	87.8	72.8	134.5	121.9	92.4
	100mm	129.3	267.9	230.3	162.3	43.2	70.4	61.7	49.4
	FB	570.9	1394.0	1199.0	799.6	-	-	-	-
Scenario 6: NG from FSRU ESD Valve to ORF (up to SDV-064001 / SDV-064002) including MLA	10mm	22.8	32.0	27.5	10.7	16.5	14.3	NR	NR
	25mm	45.5	80.9	72.3	51.5	12.6	9.1	NR	NR
	50mm	81.3	150.1	134.2	97.5	-	-	-	-
	100mm	145.1	275.5	245.2	175.6	-	-	-	-
	FB	642.1	1395.0	1199.0	800.9	-	-	-	-

Description	Hole Size	Initial Downwind Impact Distance (m)				5 Min Downwind Impact Distance (m)			
		Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²	Flame Length (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
Scenario 7: ORF Pipework (from SDV-064001 / SDV-064002 to SDV-064007)	10mm	22.8	32.0	27.5	10.7	15.6	11.0	NR	NR
	25mm	45.5	80.9	72.3	51.5	9.9	NR	NR	NR
	50mm	81.3	150.1	134.2	97.5	-	-	-	-
	100mm	145.1	275.5	245.2	175.6	-	-	-	-
	FB	459.1	964.9	825.0	566.4	-	-	-	-
Scenario 8: PKP (from SDV-064007 to MLV-064011) (~300m)	10mm	22.8	32.0	27.5	10.7	21.9	25.6	21.8	NR
	25mm	45.5	80.9	72.3	51.5	36.1	52.6	48.0	34.8
	50mm	81.3	150.1	134.2	97.5	39.0	67.1	60.5	42.5
	100mm	145.1	275.5	245.2	175.6	9.3	NR	NR	NR
	FB	506.2	1075.0	918.4	626.4	-	-	-	-
Scenario 9: Odourant storage & pipework ^{Note 1}	10mm	11.4	21.8	17.9	10.1	9.0	NR	NR	NR
	25mm	24.5	54.1	45.2	26.2	16.6	25.2	20.3	NR
Scenario 10: Ship Collision	Minor	51.9	91.6	83.2	62.1	No isolation during a ship collision and LoC incident therefore LoC incident will continue until the tanker is emptied.			
	Major	91.1	165.1	149.3	111.6				
Scenario 11: Ship to Ship Loading Hose Failure	10mm	17.5	15.0	13.7	10.5	-	-	-	-
	25mm	37.6	35.1	30.8	23.0	-	-	-	-
	50mm	67.0	68.6	57.1	42.1	-	-	-	-
	100mm	119.0	133.7	107.1	75.9	-	-	-	-
	1 x FB	173.3	320.4	256.7	134.6	-	-	-	-
	6 x FB	232.1	386.8	310.3	159.5	-	-	-	-

Notes:

- Scenario is only applicable during odourant SBC changeout (i.e. shipping container side fully open and accessible). During normal operation, LOC will occur within the shipping container. Results at the odourant injection conditions (i.e. Scenario 9b) are either very localised or not produced due to the low flow rates limited by the injection pump. In these circumstances, LOC likely to be high pressure natural gas (i.e. Scenario 7)

A.3 Pool Fires

Table A- 4 presents the worst case maximum potential pool fire radiant heat impact distances at 1m above grade at ORF or sea level while Table A- 5 presents worst case maximum potential pool fire radiant heat impact distances at 14 m above grade at FSRU. Noting worst case results are selected from all release directions (vertical up, vertical down, and horizontal) and weather conditions modelled. Thermal radiation levels not reached at the reporting height are indicated by “NR”.

Table A- 4: Worst Case Pool Fire Results reported at 1m ORF grade level or sea level

Description	Hole Size	Downwind Impact Distance (m)			
		Pool Diameter (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
Scenario 2: LNG from cargo tank via liquid header to regasification plant	10mm	2.3	NR	NR	NR
	25mm	8.4	46.7	37.8	NR
	50mm	17.9	103.8	86.4	41.2
	100mm	30.3	158.3	137.1	70.3
	FB	30.6	159.8	138.4	71.1
Scenario 4: LNG from Regasification Booster Pumps	10mm		Pool not formed		
	25mm		Pool not formed		
	50mm		Pool not formed		
	100mm	30.2	158.3	137.1	70.3
	FB	30.6	160.0	138.6	71.2
Scenario 9: Odourant storage & pipework ^{Note 1}	10mm	4.5	21.7	18.9	12.0
	25mm	11.3	49.8	42.4	25.3
Scenario 10: Ship Collision	Minor	6.8	48.8	42.1	25.3
	Major	13.4	102.5	87.7	51.1
Scenario 11: Ship to Ship Loading Hose Failure	10mm		Pool not formed		
	25mm		Pool not formed		
	50mm	0.96	15.1	14.7	13.5
	100mm	15.6	126.1	106.2	54.3
	1 x FB	46.2	295.4	248.4	137.0

Table A- 5: Worst Case Pool Fire Results reported at FSRU level

Description	Hole Size	Downwind Impact Distance (m)			
		Pool Diameter (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
Scenario 2: LNG from cargo tank via liquid	10mm	2.3	8.6	7.4	4.4
	25mm	8.4	45.9	38.7	22.5

Description	Hole Size	Downwind Impact Distance (m)			
		Pool Diameter (m)	3 kW/m ²	4.7 kW/m ²	23 kW/m ²
header to regasification plant	50mm	17.9	99.6	83.5	47.6
	100mm	30.3	156.8	131.7	74.2
	FB	30.6	158.2	132.9	74.9
Scenario 4: LNG from Regasification Booster Pumps	10mm		Pool not formed		
	25mm		Pool not formed		
	50mm		Pool not formed		
	100mm	30.2	156.7	131.6	74.2
	FB	30.6	158.4	133.1	75.0
Scenario 9: Odourant storage & pipework ^{Note 1}	10mm	4.5	15.0	10.9	NR
	25mm	11.3	46.1	38.0	23.8
Scenario 10: Ship Collision	Minor	3.6	26.5	24.9	NR
	Major	10.2	90.5	77.9	51.0
Scenario 11: Ship to Ship Loading Hose Failure	10mm		Pool not formed		
	25mm		Pool not formed		
	50mm	1.0	NR	NR	NR
	100mm	15.6	126.4	106.5	61.3
	1 x FB	46.2	295.0	248.8	140.4

Notes:

- Scenario is only applicable during odourant SBC changeout (i.e. shipping container side fully open and accessible). During normal operation, LOC will occur within the shipping container. Results at the odourant injection conditions (i.e. dosing) are either very localised or not produced due to the low flow rates limited by the injection pump. In these circumstances, LOC likely to be high pressure natural gas (i.e. Scenario 7).

A.4 VCE Results

Table A- 6 presents the worst case VCE overpressure impacts reported at the level of the explosion.

Table A- 6: Worst Case VCE Overpressure Results

Area	Peak Overpressure (kPa)	Distance to Overpressure Level (m)				
		7 kPa	14 kPa	21 kPa	35 kPa	70 kPa
LNG Cargo Tank 1-4 Piping	51	52.7	28.9	20.8	12.9	-
Cargo Machinery Room	203	163.5	93.6	70.3	51.0	35.2
Suction Drum Module	51	83.5	45.7	32.9	20.4	-
Regasification Module – Bottom Half	101	138.5	79.3	59.6	43.3	26.3

Area	Peak Overpressure (kPa)	Distance to Overpressure Level (m)				
		7 kPa	14 kPa	21 kPa	35 kPa	70 kPa
Regasification Module – Top Half	51	176.2	96.6	69.4	43.1	-
Odourant Package Shipping Container	20	25.7	12.7	-	-	-

A.5 Odourant Toxic Dispersion

Table A- 7 shows the worst case toxic dispersion modelling results for a release of Spotleak1005 during changeout of a Spotleak 1005 SBC. Noting worst case results are selected from all release directions (vertical up, vertical down, and horizontal) and weather conditions modelled. During normal operation, a LOC will occur within the shipping container which is provided with an activated carbon filter system and toxic dispersion is not expected. In addition, results at the odourant injection conditions (i.e. dosing) are either very localised or not produced due to the low flow rates as limited by the injection pump. Downwind distances were modelled at the assumed AEGL 1 (6 ppm) and AEGL 2 (900 ppm) concentrations for TBM. Toxic concentration levels not reached at the reporting height are indicated by “NR”.

Table A- 7: Worst Case Toxic Dispersion Results

Description	Hole Size	Distance downwind to concentration (m) at ORF / sea level		Distance downwind to concentration (m) at FSRU level	
		6 ppm (AEGL 1)	900 ppm (AEGL 2)	6 ppm (AEGL 1)	900 ppm (AEGL 2)
Scenario 9: Odourant storage & pipework	10mm	2480.0	54.4	1561.0	NR
	25mm	2485.0	89.6	1530.0	NR