

## LIST OF PMSC RISK ASSESSMENTS

Risk Assessment Number	Risk Assessment Name	Review at PMSC Liaison Meeting
<a href="#">FP PMSC RA (F)1</a>	Forth River Passage - Standard Vessel	PMC 08th May 2017
<a href="#">FP PMSC RA (F)2</a>	Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)3</a>	Port of Rosyth - Arrival/Sailing No.1 Rosyth Channel Buoy to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)4</a>	Port of Methil - Arrival/Sailing Methil Pilot Station to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)5</a>	Methil SE Berth - Arrival/Sailing Methil Pilot Station to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)6</a>	Port of Kirkcaldy - Arrival/Sailing Close Approaches of Dock to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)7</a>	Port of Burntisland - Arrival/Sailing Close Approaches of Dock to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)8</a>	Inverkeithing - Arrival/Sailing Saint Davids Beacon to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)9</a>	Braefoot Jetty - Arrival/Sailing Eastern Limits to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)10</a>	Port of Grangemouth - Arrival/Sailing Hen & Chickens to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)11</a>	Crombie Berthing/Sailing	PMC 08th May 2017
<a href="#">FP PMSC RA (F)12</a>	Hound Point - Arrival/Sailing Eastern Limits to Berth	PMC 08th May 2017
<a href="#">FP PMSC RA (F)13</a>	Cruise Vessels at Anchorage	PMC 08th May 2017
<a href="#">FP PMSC RA (F)14</a>	Forth - River Transit and Berthings/Sailings small comerial craft (tugs, workboats, pilot boats etc.)	PMC 08th May 2017
<a href="#">FP PMSC RA (F)15</a>	Bridge Construction Operations	PMC 08th May 2017
<a href="#">FP PMSC RA (F)16</a>	Cruise Vessel Tender Operations (Hound Point / Newhaven)	PMC 08th May 2017
<a href="#">FP PMSC RA (T)1</a>	Tay River Passage - Standard Vessels	Dundee - May 2015
<a href="#">FP PMSC RA (T)2</a>	Port of Dundee - Arrival/Sailing Port Approaches to River Berth	Dundee - May 2015
<a href="#">FP PMSC RA (T)4</a>	Tay Large Vessel Movement - Arrival/Sailing	Dundee - June 2018
<a href="#">FP PMSC RA (T)5</a>	Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth	Dundee - Feb 2018
<a href="#">FP PMSC RA (T)6</a>	Tay - River Transit and Berthings/Sailings small comerial craft (tugs, workboats, pilot boats etc.)	Dundee - May 2015
<a href="#">FP PMSC RA (F&amp;T)1</a>	Forth & Tay - Vessel at Anchor	PMC - 06th Sept 2017
<a href="#">FP PMSC RA (F&amp;T)2</a>	Forth & Tay - Towage Operations	Inner Forth - 06th Feb 2018
<a href="#">FP PMSC RA (F&amp;T)3</a>	Forth & Tay - Immobilised Vessels	PMC - 06th Sept 2017
<a href="#">FP PMSC RA (F&amp;T)4</a>	Forth & Tay - Bunkering Operations in Dock	PMC - 06th Sept 2017
<a href="#">FP PMSC RA (F&amp;T)5</a>	Forth & Tay - Bunkering Operations in Tidal Waters	PMC - 06th Sept 2017
<a href="#">FP PMSC RA (F&amp;T)6</a>	Forth & Tay - NAABSA Berths	PMC - 06th Sept 2017
<a href="#">FP PMSC RA (F&amp;T)7</a>	<b>Forth &amp; Tay - Diving Operations</b>	<b>Inner Forth - 09th Oct 2018</b>
<a href="#">FP PMSC RA (F&amp;T)8</a>	<b>Forth &amp; Tay - Recreational Events</b>	<b>Inner Forth - 09th Oct 2018</b>
<a href="#">FP PMSC RA (F&amp;T)9</a>	Forth & Tay - Underwater Cables & Pipelines	PMC, Fife/BF-HP/LTH/GMTH PMSC March/April 2015
<a href="#">FP PMSC RA (F&amp;T)10</a>	Forth & Tay - Marine Pollution (Tidal Waters)	(PMC 01/09) ALL PMSC's
<a href="#">FP PMSC RA (F&amp;T)11</a>	Forth & Tay - Marine Pollution (Enclosed Dock)	(PMC 01/09) ALL PMSC's
	Red indicates last Reviewed	

PMSC RISK ASSESSMENT - RISK RANKING

Rank	HazardID	Hazard What can go wrong (Event leading to a consequence)	Hazard Scoring
1	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.3 Contact</a>	Contact	7.75
2	<a href="#">FP PMSC RA (F) 10 - 1.2 Contact</a>	Contact	7.375
3	<a href="#">FP PMSC RA (F) 12 - 1.2 Contact</a>	Contact	7.25
3	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.1 Dragging Anchor</a>	Dragging Anchor	7.25
3	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.4 Hull Damage</a>	Hull Damage	7.25
6	<a href="#">FP PMSC RA (T) 01 - 1.3 Grounding</a>	Grounding	7
6	<a href="#">FP PMSC RA (T) 02 - 1.2 Contact</a>	Contact	7
8	<a href="#">FP PMSC RA (T) 01 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	6.875
8	<a href="#">FP PMSC RA (F) 07 - 1.1 Collision</a>	Collision	6.875
10	<a href="#">FP PMSC RA (F) 10 - 1.5 Fire / Explosion</a>	Fire / Explosion	6.75
10	<a href="#">FP PMSC RA (F) 09 - 1.2 Contact</a>	Contact	6.75
12	<a href="#">FP PMSC RA (T) 02 - 1.5 Fire / Explosion</a>	Fire / Explosion	6.625
13	<a href="#">FP PMSC RA (F) 15 - 1.5 Fire / Explosion</a>	Fire / Explosion	6.5
14	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.1 Capsizing / Flooding</a>	Capsizing / Flooding	6.375
14	<a href="#">FP PMSC RA (F) 04 - 1.2 Contact</a>	Contact	6.375
14	<a href="#">FP PMSC RA (F) 02 - 1.1 Collision</a>	Collision	6.375
17	<a href="#">FP PMSC RA (F) 02 - 1.3 Grounding</a>	Grounding	6.25
17	<a href="#">FP PMSC RA (F) 03 - 1.3 Grounding</a>	Grounding	6.25
19	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.3 Fire</a>	Dundee - Feb 2018	6.125
19	<a href="#">FP PMSC RA (F) 07 - 1.2 Contact</a>	Contact	6.125
19	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.1 Collision with bunker vessel and receiving vessel</a>	vessel	6.125
22	<a href="#">FP PMSC RA (F) 02 - 1.2 Contact</a>	Contact	6
22	<a href="#">FP PMSC RA (F) 11 - 1.2 Contact</a>	Contact	6
22	<a href="#">FP PMSC RA (F) 05 - 1.2 Contact</a>	Contact	6
22	<a href="#">FP PMSC RA (T) 04 - 1.5 Fire / Explosion</a>	Fire / Explosion	6
26	<a href="#">FP PMSC RA (F) 05 - 1.3 Grounding</a>	Grounding	5.875
26	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.2 Fire</a>	Fire	5.875
26	<a href="#">FP PMSC RA (F) 12 - 1.5 Fire / Explosion</a>	Fire / Explosion	5.875
29	<a href="#">FP PMSC RA (F) 10 - 1.3 Grounding</a>	Grounding	5.75
29	<a href="#">FP PMSC RA (F) 14 - 1.2 Contact</a>	Contact	5.75
29	<a href="#">FP PMSC RA (F) 16 - 1.2 Contact</a>	Contact	5.75
29	<a href="#">FP PMSC RA (F) 15 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5.75
29	<a href="#">FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	5.75
34	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	5.625
34	<a href="#">FP PMSC RA (F) 07 - 1.3 Grounding</a>	Grounding	5.625
36	<a href="#">FP PMSC RA (F) 03 - 1.2 Contact</a>	Contact	5.5
36	<a href="#">FP PMSC RA (F) 15 - 1.3 Grounding</a>	Grounding	5.5
36	<a href="#">FP PMSC RA (F) 13 - 1.3 Grounding</a>	Grounding	5.5
36	<a href="#">FP PMSC RA (F) 13 - 1.5 Fire / Explosion</a>	Fire / Explosion	5.5
36	<a href="#">FP PMSC RA (T) 06 - 1.1 Collision</a>	Collision	5.5
36	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.3 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Product)	5.5
42	<a href="#">FP PMSC RA (F) 14 - 1.5 Fire / Explosion</a>	Fire / Explosion	5.375
42	<a href="#">FP PMSC RA (F) 14 - 1.1 Collision</a>	Collision	5.375
42	<a href="#">FP PMSC RA (F) 16 - 1.1 Collision</a>	Collision	5.375
42	<a href="#">FP PMSC RA (F) 16 - 1.5 Fire</a>	Fire	5.375
42	<a href="#">FP PMSC RA (F&amp;T) 10 - 1.1 Loss of Containment (Oil Product)</a>	Loss of Containment (Oil Product)	5.375
47	<a href="#">FP PMSC RA (F) 04 - 1.1 Collision (Fishing/Leisure Vessel)</a>	Collision (Fishing/Leisure Vessel)	5.25
47	<a href="#">FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel)</a>	Collision (Fishing/Leisure Vessel)	5.25
47	<a href="#">FP PMSC RA (F) 03 - 1.1 Collision</a>	Collision	5.25
47	<a href="#">FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&amp;T)7</a>	Grounding	5.25
47	<a href="#">FP PMSC RA (F) 13 - 1.2 Contact</a>	Contact	5.25
47	<a href="#">FP PMSC RA (T) 06 - 1.2 Contact</a>	Contact	5.25
47	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.5 Fire / Explosion</a>	Fire / Explosion	5.25
47	<a href="#">FP PMSC RA (F) 10 - 1.1 Collision</a>	Collision	5.25
55	<a href="#">FP PMSC RA (F) 05 - 1.1 Collision</a>	Collision	5
55	<a href="#">FP PMSC RA (F) 06 - 1.2 Contact</a>	Contact	5
55	<a href="#">FP PMSC RA (F) 09 - 1.5 Fire / Explosion</a>	Fire / Explosion	5
55	<a href="#">FP PMSC RA (F) 11 - 1.1 Collision</a>	Collision	5
55	<a href="#">FP PMSC RA (F) 13 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5
55	<a href="#">FP PMSC RA (T) 05 - 1.5 Fire / Explosion</a>	Fire / Explosion	5
55	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.2 Contact</a>	Contact	5
55	<a href="#">FP PMSC RA (F) 11 - 1.5 Fire / Explosion</a>	Fire / Explosion	5
55	<a href="#">FP PMSC RA (T) 04 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5
64	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.875
64	<a href="#">FP PMSC RA (F) 15 - 1.2 Contact</a>	Contact	4.875
64	<a href="#">FP PMSC RA (F) 08 - 1.2 Contact</a>	Contact	4.875
64	<a href="#">FP PMSC RA (T) 01 - 1.5 Fire / Explosion</a>	Fire / Explosion	4.875
68	<a href="#">FP PMSC RA (F) 09 - 1.1 Collision</a>	Collision	4.75
68	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.3 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Product)	4.75
68	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.4 Loss of Containment / Power / Communication</a>	Loss of Containment / Power / Communication	4.75
71	<a href="#">FP PMSC RA (F) 02 - 1.7 Loss of Dock Level (Lock Gate Operations)</a>	Loss of Dock Level (Lock Gate Operations)	4.625
71	<a href="#">FP PMSC RA (T) 04 - 1.2 Contact</a>	Contact	4.625
73	<a href="#">FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel)</a>	Collision (Fishing/Leisure Vessel)	4.5
73	<a href="#">FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&amp;T)7</a>	Grounding	4.5
73	<a href="#">FP PMSC RA (F) 01 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.5
73	<a href="#">FP PMSC RA (F) 01 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4.5
73	<a href="#">FP PMSC RA (F) 09 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.5
73	<a href="#">FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4.5
73	<a href="#">FP PMSC RA (F) 10 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.5

73	<a href="#">FP PMSC RA (F) 12 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.5
73	<a href="#">FP PMSC RA (F) 12 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4.5
73	<a href="#">FP PMSC RA (T) 06 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.5
73	<a href="#">FP PMSC RA (T) 06 - 1.5 Fire / Explosion</a>	Fire / Explosion	4.5
73	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.5 Grounding</a>	Grounding	4.5
73	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.2 Capsize / Flooding</a>	Capsizing / Flooding	4.5
73	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.3 Fire / Explosion</a>	Fire / Explosion	4.5
73	<a href="#">FP PMSC RA (F) 07 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.5
73	<a href="#">FP PMSC RA (T) 05 - 1.2 Contact</a>	Contact	4.5
89	<a href="#">FP PMSC RA (T) 02 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (F) 14 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (F) 16 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (F) 02 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (F) 03 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (F) 05 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (T) 05 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.4 Fire/Explosion</a>	Fire / Explosion	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.1 Contact</a>	Contact	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.1 Contact</a>	Contact	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 10 - 1.1 Loss of Containment (Oil Product)</a>	Loss of Containment (Oil Product)	4.375
89	<a href="#">FP PMSC RA (F) 15 - 1.6 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Product)	4.375
89	<a href="#">FP PMSC RA (F) 08 - 1.5 Fire / Explosion</a>	Fire / Explosion	4.375
102	<a href="#">FP PMSC RA (F) 04 - 1.3 Grounding</a>	Grounding	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.1 Collision with bunker vessel and receiving vessel</a>	vessel	4.25
102	<a href="#">FP PMSC RA (F) 14 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4.25
102	<a href="#">FP PMSC RA (F) 16 - 1.6 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Product)	4.25
102	<a href="#">FP PMSC RA (F) 11 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4.25
102	<a href="#">FP PMSC RA (F) 12 - 1.1 Collision</a>	Collision	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.3 Grounding</a>	Grounding	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&amp;T) 1</a>	Grounding	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.4 Fire/Explosion</a>	Fire / Explosion	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.4 Collision</a>	Collision	4.25
102	<a href="#">FP PMSC RA (T) 04 - 1.7 Allision</a>	Allision	4.25
113	<a href="#">FP PMSC RA (F&amp;T) 03 - 1.1 Contact Refer Also to FP PMSC RA (F&amp;T) 1</a>	Contact	4.125
113	<a href="#">FP PMSC RA (F) 15 - 1.1 Collision</a>	Collision	4.125
116	<a href="#">FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations)</a>	Loss of Dock Level (Lock Gate Operations)	4
116	<a href="#">FP PMSC RA (F) 04 - 1.7 Loss of Dock Level (Lock Gate Operations)</a>	Loss of Dock Level (Lock Gate Operations)	4
116	<a href="#">FP PMSC RA (F) 01 - 1.2 Contact</a>	Contact	4
116	<a href="#">FP PMSC RA (F) 10 - 1.7 Loss of Dock Level</a>	Loss of Dock Level	4
116	<a href="#">FP PMSC RA (F) 11 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4
116	<a href="#">FP PMSC RA (F) 12 - 1.3 Grounding</a>	Grounding	4
116	<a href="#">FP PMSC RA (F) 13 - 1.6 Loss of Containment (oil product) Refer also to FP PMSC RA (F&amp;T) 09</a>	Loss of Containment (Oil Product)	4
116	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.2 Pipeline / Cable Damage</a>	Pipeline / Cable Damage	4
116	<a href="#">FP PMSC RA (F) 14 - 1.3 Grounding</a>	Grounding	4
116	<a href="#">FP PMSC RA (F) 16 - 1.3 Grounding</a>	Grounding	4
126	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.2 Contact</a>	Contact	3.875
126	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.2 Contact</a>	Contact	3.875
126	<a href="#">FP PMSC RA (F) 01 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.875
126	<a href="#">FP PMSC RA (F) 02 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.875
126	<a href="#">FP PMSC RA (F) 03 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.875
126	<a href="#">FP PMSC RA (F) 09 - 1.3 Grounding</a>	Grounding	3.875
126	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.5 Loss of Containment</a>	Loss of Containment	3.875
126	<a href="#">FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.875
126	<a href="#">FP PMSC RA (T) 04 - 1.1 Collision</a>	Collision	3.875
126	<a href="#">FP PMSC RA (T) 04 - 1.6 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Products)	3.875
137	<a href="#">FP PMSC RA (T) 02 - 1.1 Collision</a>	Collision	3.75
137	<a href="#">FP PMSC RA (T) 05 - 1.1 Collision</a>	Collision	3.75
137	<a href="#">FP PMSC RA (T) 02 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.75
137	<a href="#">FP PMSC RA (F) 07 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.75
137	<a href="#">FP PMSC RA (T) 04 - 1.3 Grounding</a>	Grounding	3.75
142	<a href="#">FP PMSC RA (F) 01 - 1.1 Collision</a>	Collision	3.625
142	<a href="#">FP PMSC RA (T) 01 - 1.1 Collision</a>	Collision	3.625
142	<a href="#">FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.625
145	<a href="#">FP PMSC RA (F) 01 - 1.3 Grounding</a>	Grounding	3.5
145	<a href="#">FP PMSC RA (F) 04 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	3.5
145	<a href="#">FP PMSC RA (F) 06 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	3.5
145	<a href="#">FP PMSC RA (F) 08 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	3.5
145	<a href="#">FP PMSC RA (T) 02 - 1.3 Grounding</a>	Grounding	3.5
150	<a href="#">FP PMSC RA (T) 01 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.375
151	<a href="#">FP PMSC RA (F) 02 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.25
151	<a href="#">FP PMSC RA (F) 05 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.25
153	<a href="#">FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3.125
153	<a href="#">FP PMSC RA (F) 03 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.125
153	<a href="#">FP PMSC RA (F) 04 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.125
153	<a href="#">FP PMSC RA (F) 06 - 1.5 Fire / Explosion</a>	Fire / Explosion	3.125
153	<a href="#">FP PMSC RA (F) 11 - 1.3 Grounding</a>	Grounding	3.125
153	<a href="#">FP PMSC RA (T) 01 - 1.2 Contact</a>	Contact	3.125
153	<a href="#">FP PMSC RA (T) 05 - 1.3 Grounding</a>	Grounding	3.125
153	<a href="#">FP PMSC RA (F&amp;T) 07 - 1.2 - Collision / contact</a>	Collision / Contact	3.125
113	<a href="#">FP PMSC RA (F&amp;T) 07 - 1.1 - Swamping / turbulence / interaction</a>	Swamping / interaction / turbulence	4.125
161	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.6 Man Overboard / Personal Injury</a>	Man Overboard / Personal Injury	3
161	<a href="#">FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3
161	<a href="#">FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3
164	<a href="#">FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2.875
164	<a href="#">FP PMSC RA (T) 06 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2.875

126	<a href="#">FP PMSC RA (F&amp;T) 08 - 1.1 - Collision / contact</a>	Collision / Contact	3.875
166	<a href="#">FP PMSC RA (T) 06 - 1.3 Grounding</a>	Grounding	2.625
166	<a href="#">FP PMSC RA (F&amp;T) 08 - 1.2 - Swamping / interaction / turbulence</a>	Swamping / interaction / turbulence	2.625

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC (R) 1/03	<b>Original Date</b> Jul-13
<b>Risk Ranking</b>	<b>Review Due</b> Ongoing	<b>Revised By / Date</b> MM / August 2015

**PMSC RISK ASSESSMENT - RISK RANKING**

Rank	HazardID	Hazard What can go wrong (Event leading to a consequence)	Most Likely Risk scored at Residual level				Worst Credible Risk scored at Residual level				Hazard Scoring
			People	Property	Environment	Business	People	Property	Environment	Business	
1	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.3 Contact</a>	Contact	5	10	5	10	6	8	8	10	7.75
2	<a href="#">FP PMSC RA (F) 10 - 1.2 Contact</a>	Contact	5	10	5	5	6	10	8	10	7.375
3	<a href="#">FP PMSC RA (F) 12 - 1.2 Contact</a>	Contact	4	8	4	8	6	10	8	10	7.25
3	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.1 Dragging Anchor</a>	Dragging Anchor	4	8	4	4	8	10	10	10	7.25
3	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.4 Hull Damage</a>	Hull Damage	3	9	9	9	4	8	8	8	7.25
6	<a href="#">FP PMSC RA (T) 02 - 1.2 Contact</a>	Contact	8	8	4	8	6	6	8	8	7
6	<a href="#">FP PMSC RA (T) 01 - 1.3 Grounding</a>	Grounding	2	6	4	6	10	10	10	8	7
8	<a href="#">FP PMSC RA (T) 01 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	5	4	4	10	10	10	8	6.875
8	<a href="#">FP PMSC RA (F) 07 - 1.1 Collision</a>	Collision	4	9	6	6	8	8	6	8	6.875
10	<a href="#">FP PMSC RA (F) 10 - 1.5 Fire / Explosion</a>	Fire / Explosion	4	4	4	4	10	10	8	10	6.75
10	<a href="#">FP PMSC RA (F) 09 - 1.2 Contact</a>	Contact	3	6	3	6	6	10	10	10	6.75
12	<a href="#">FP PMSC RA (T) 02 - 1.5 Fire / Explosion</a>	Fire / Explosion	9	9	6	6	5	5	5	8	6.625
13	<a href="#">FP PMSC RA (F) 15 - 1.5 Fire / Explosion</a>	Fire / Explosion	10	10	5	10	5	5	3	4	6.5
14	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.1 Capsizing / Flooding</a>	Capsizing / Flooding	8	8	8	8	5	5	4	5	6.375
14	<a href="#">FP PMSC RA (F) 04 - 1.2 Contact</a>	Contact	5	10	5	5	6	8	6	6	6.375
14	<a href="#">FP PMSC RA (F) 02 - 1.1 Collision</a>	Collision	6	9	6	6	6	6	6	6	6.375
17	<a href="#">FP PMSC RA (F) 02 - 1.3 Grounding</a>	Grounding	3	6	6	3	6	8	8	10	6.25
17	<a href="#">FP PMSC RA (F) 03 - 1.3 Grounding</a>	Grounding	3	6	6	3	6	8	8	10	6.25
19	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.3 Fire</a>	Fire	4	4	1	4	10	10	6	10	6.125
19	<a href="#">FP PMSC RA (F) 07 - 1.2 Contact</a>	Contact	5	10	5	5	4	8	6	6	6.125
19	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.1 Collision with bunker vessel and receiving vessel</a>	Collision with bunker vessel and receiving vessel	9	9	6	6	4	5	5	5	6.125
22	<a href="#">FP PMSC RA (T) 04 - 1.5 Fire / Explosion</a>	Fire / Explosion	8	8	6	6	5	5	5	5	6
22	<a href="#">FP PMSC RA (F) 11 - 1.2 Contact</a>	Contact	6	6	3	3	6	8	8	8	6
22	<a href="#">FP PMSC RA (F) 02 - 1.2 Contact</a>	Contact	5	5	5	5	6	8	6	8	6
22	<a href="#">FP PMSC RA (F) 05 - 1.2 Contact</a>	Contact	8	8	4	4	6	6	6	6	6
26	<a href="#">FP PMSC RA (F) 05 - 1.3 Grounding</a>	Grounding	3	6	6	6	6	6	6	8	5.875
26	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.2 Fire</a>	Fire	3	3	3	6	8	8	8	8	5.875
26	<a href="#">FP PMSC RA (F) 12 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	9	3	9	5	5	5	5	5.875
29	<a href="#">FP PMSC RA (F) 10 - 1.3 Grounding</a>	Grounding	3	6	3	6	2	10	6	10	5.75
29	<a href="#">FP PMSC RA (F) 14 - 1.2 Contact</a>	Contact	5	5	5	5	8	8	4	6	5.75
29	<a href="#">FP PMSC RA (F) 16 - 1.2 Contact</a>	Contact	5	5	5	5	8	8	4	6	5.75
29	<a href="#">FP PMSC RA (F) 15 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	8	8	4	8	5	5	3	5	5.75
29	<a href="#">FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4	4	8	8	4	6	6	6	5.75
34	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	6	6	9	6	3	5	5	5	5.625

34	<a href="#">FP PMSC RA (F) 07 - 1.3 Grounding</a>	Grounding	3	6	6	6	6	6	6	6	6	6	6	5.625
36	<a href="#">FP PMSC RA (F) 03 - 1.2 Contact</a>	Contact	5	5	5	5	6	6	6	6	6	6	6	5.5
36	<a href="#">FP PMSC RA (F) 15 - 1.3 Grounding</a>	Grounding	5	10	5	10	3	4	3	4	3	4	3	5.5
36	<a href="#">FP PMSC RA (F) 13 - 1.3 Grounding</a>	Grounding	4	6	6	8	5	5	5	5	5	5	5	5.5
36	<a href="#">FP PMSC RA (F) 13 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	6	6	5	5	5	5	5	5	5	5.5
36	<a href="#">FP PMSC RA (T) 06 - 1.1 Collision</a>	Collision	3	6	6	3	8	6	4	8	6	4	8	5.5
36	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.3 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Product)	6	6	9	9	3	3	4	4	4	4	4	5.5
42	<a href="#">FP PMSC RA (F) 14 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	3	3	6	8	8	4	8	8	4	8	5.375
42	<a href="#">FP PMSC RA (F) 14 - 1.1 Collision</a>	Collision	6	3	3	3	8	8	4	8	8	4	8	5.375
42	<a href="#">FP PMSC RA (F) 16 - 1.1 Collision</a>	Collision	6	3	3	3	8	8	4	8	8	4	8	5.38
42	<a href="#">FP PMSC RA (F) 16 - 1.5 Fire</a>	Fire / Explosion	3	3	3	6	8	8	4	8	8	4	8	5.38
42	<a href="#">FP PMSC RA (F&amp;T) 10 - 1.1 Loss of Containment (Oil Product)</a>	Loss of Containment (Oil Product)	5	5	10	5	3	5	5	5	5	5	5	5.375
47	<a href="#">FP PMSC RA (F) 04 - 1.1 Collision (Fishing/Leisure Vessel)</a>	Collision (Fishing/Leisure Vessel)	4	4	2	4	10	6	6	6	6	6	6	5.25
47	<a href="#">FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel)</a>	Collision (Fishing/Leisure Vessel)	4	4	2	4	10	6	6	6	6	6	6	5.25
47	<a href="#">FP PMSC RA (F) 13 - 1.2 Contact</a>	Contact	6	6	4	6	5	5	5	5	5	5	5	5.25
47	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	6	4	5	5	5	5	5	5	5	5.25
47	<a href="#">FP PMSC RA (T) 06 - 1.2 Contact</a>	Contact	5	5	5	5	6	6	4	6	6	4	6	5.25
47	<a href="#">FP PMSC RA (F) 03 - 1.1 Collision</a>	Collision	4	6	4	4	6	6	6	6	6	6	6	5.25
47	<a href="#">FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&amp;T)7</a>	Grounding	2	4	4	2	6	8	8	8	8	8	8	5.25
47	<a href="#">FP PMSC RA (F) 10 - 1.1 Collision</a>	Collision	4	6	6	6	5	5	5	5	5	5	5	5.25
55	<a href="#">FP PMSC RA (T) 04 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5	5	5	5	5	5	5	5	5	5	5	5
55	<a href="#">FP PMSC RA (F) 05 - 1.1 Collision</a>	Collision	4	4	4	4	6	6	6	6	6	6	6	5
55	<a href="#">FP PMSC RA (F) 06 - 1.2 Contact</a>	Contact	4	4	4	4	6	6	6	6	6	6	6	5
55	<a href="#">FP PMSC RA (F) 09 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	2	6	5	5	5	5	5	5	5	5
55	<a href="#">FP PMSC RA (T) 05 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	3	6	5	5	4	5	5	4	5	5
55	<a href="#">FP PMSC RA (F) 13 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5	5	5	5	5	5	5	5	5	5	5	5
55	<a href="#">FP PMSC RA (F) 11 - 1.1 Collision</a>	Collision	4	6	6	6	5	5	4	4	4	4	4	5
55	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.2 Contact</a>	Contact	4	6	4	6	5	5	5	5	5	5	5	5
55	<a href="#">FP PMSC RA (F) 11 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	3	6	5	5	4	5	5	4	5	5
64	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	5	5	5	5	5	5	5	5	5	5	4.875
64	<a href="#">FP PMSC RA (F) 15 - 1.2 Contact</a>	Contact	5	10	5	5	4	4	3	3	3	3	3	4.875
64	<a href="#">FP PMSC RA (F) 08 - 1.2 Contact</a>	Contact	4	3	3	3	6	8	6	6	6	6	6	4.875
64	<a href="#">FP PMSC RA (T) 01 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	6	3	5	5	3	5	5	3	5	4.875
68	<a href="#">FP PMSC RA (F) 09 - 1.1 Collision</a>	Collision	6	6	2	4	5	5	5	5	5	5	5	4.75
68	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.3 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Product)	3	3	9	9	3	3	4	4	4	4	4	4.75
68	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.4 Loss of Containment / Power / Communication</a>	Loss of Containment / Power / Communication	4	6	4	6	4	5	4	5	4	5	4	4.75
71	<a href="#">FP PMSC RA (T) 04 - 1.2 Contact</a>	Contact	3	9	3	6	3	5	4	4	4	4	4	4.625
71	<a href="#">FP PMSC RA (F) 02 - 1.7 Loss of Dock Level (Lock Gate Operations)</a>	Loss of Dock Level (Lock Gate Operations)	3	3	3	9	5	5	4	5	4	5	4	4.625
73	<a href="#">FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel)</a>	Collision (Fishing/Leisure Vessel)	4	6	4	4	5	5	4	4	4	4	4	4.5
73	<a href="#">FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&amp;T)7</a>	Grounding	2	4	4	2	4	6	6	8	6	8	6	4.5
73	<a href="#">FP PMSC RA (T) 06 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	6	8	4	6	3	4	2	3	4	2	3	4.5

73	<a href="#">FP PMSC RA (F) 01 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	5	4	4	5	5	5	4	4.5
73	<a href="#">FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4	4	6	6	3	3	5	5	4.5
73	<a href="#">FP PMSC RA (F) 10 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	3	4	5	5	5	5	5	4.5
73	<a href="#">FP PMSC RA (F) 12 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	4	4	6	6	3	3	5	5	4.5
73	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.5 Grounding</a>	Grounding	4	4	4	6	4	5	4	5	4.5
73	<a href="#">FP PMSC RA (F) 09 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	3	5	5	5	3	5	5	5	4.5
73	<a href="#">FP PMSC RA (F) 12 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	3	5	5	5	3	5	5	5	4.5
73	<a href="#">FP PMSC RA (T) 06 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	3	3	3	6	8	4	6	4.5
73	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.2 Capsize / Flooding</a>	Capsizing / Flooding	3	5	3	5	5	5	5	5	4.5
73	<a href="#">FP PMSC RA (F) 01 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2	4	6	6	3	5	5	5	4.5
73	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.3 Fire / Explosion</a>	Fire / Explosion	4	5	4	5	4	5	4	5	4.5
73	<a href="#">FP PMSC RA (F) 07 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	6	4	6	5	4	3	4	4.5
73	<a href="#">FP PMSC RA (T) 05 - 1.2 Contact</a>	Contact	3	9	3	6	3	5	3	4	4.5
89	<a href="#">FP PMSC RA (T) 02 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	4	3	4	5	5	5	5	4.375
89	<a href="#">FP PMSC RA (F) 14 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5	5	2	5	5	5	3	5	4.375
89	<a href="#">FP PMSC RA (F) 16 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	5	5	2	5	5	5	3	5	4.38
89	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.1 Contact</a>	Contact	6	3	3	6	4	5	3	5	4.375
89	<a href="#">FP PMSC RA (F) 02 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	4	5	4	4	4	5	5	4.375
89	<a href="#">FP PMSC RA (F) 03 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	4	5	4	4	4	5	5	4.375
89	<a href="#">FP PMSC RA (F) 05 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	4	5	4	4	4	5	5	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.4 Fire/Explosion</a>	Fire / Explosion	4	4	3	4	5	5	5	5	4.375
89	<a href="#">FP PMSC RA (T) 05 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	2	4	6	6	4	4	4	5	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.1 Contact</a>	Contact	4	6	2	6	3	5	4	5	4.375
89	<a href="#">FP PMSC RA (F&amp;T) 11 - 1.1 Loss of Containment (Oil Product)</a>	Loss of Containment (Oil Product)	5	5	5	5	3	4	4	4	4.375
89	<a href="#">FP PMSC RA (F) 15 - 1.6 Loss of Containment (Oil Product)</a>	Loss of Containment (Oil Product)	5	5	10	5	2	2	3	3	4.375
89	<a href="#">FP PMSC RA (F) 08 - 1.5 Fire / Explosion</a>	Fire / Explosion	6	6	4	4	4	4	3	4	4.375
102	<a href="#">FP PMSC RA (T) 04 - 1.7 Allision</a>	Allision	2	6	2	4	5	5	5	5	4.25
102	<a href="#">FP PMSC RA (F) 04 - 1.3 Grounding</a>	Grounding	2	4	4	2	4	6	6	6	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.1 Collision with bunker vessel and receiving vessel</a>	Collision with bunker vessel and receiving vessel	6	6	2	2	4	5	4	5	4.25
102	<a href="#">FP PMSC RA (F) 14 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	3	3	6	6	6	4	4.25
102	<a href="#">FP PMSC RA (F) 16 - 1.6 Loss of Containment (Oil Product)</a>	Loss of Containment (Oil Product)	3	3	3	3	6	6	6	4	4.25
102	<a href="#">FP PMSC RA (F) 11 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	5	3	5	4	5	3	5	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.4 Fire/Explosion</a>	Fire / Explosion	4	4	3	4	5	5	4	5	4.25
102	<a href="#">FP PMSC RA (F) 12 - 1.1 Collision</a>	Collision	2	6	2	6	3	5	5	5	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 01 - 1.3 Grounding</a>	Grounding	2	4	4	4	5	5	5	5	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 03 - 1.1 Contact Refer Also to FP PMSC RA (F&amp;T) 1</a>	Contact	2	6	6	4	3	5	4	4	4.25
102	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.4 Collision</a>	Collision	3	6	6	3	4	4	4	4	4.25
113	<a href="#">FP PMSC RA (F&amp;T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&amp;T) 1</a>	Grounding	4	6	4	4	3	4	4	4	4.125
113	<a href="#">FP PMSC RA (F) 15 - 1.1 Collision</a>	Collision	4	6	4	4	4	4	3	4	4.125
113	<a href="#">FP PMSC RA (F&amp;T) 07 - 1.1 - Swamping / turbulence / interaction</a>	Swamping / interaction / turbulence	6	4	4	4	5	4	2	4	4.125
116	<a href="#">FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations)</a>	Loss of Dock Level (Lock Gate Operations)	3	3	3	3	2	6	6	6	4

116	<a href="#">FP PMSC RA (F) 04 - 1.7 Loss of Dock Level (Lock Gate Operations)</a>	Loss of Dock Level (Lock Gate Operations)	3	3	3	3	2	6	6	6	4
116	<a href="#">FP PMSC RA (F) 10 - 1.7 Loss of Dock Level</a>	Loss of Dock Level	4	4	4	4	3	5	3	5	4
116	<a href="#">FP PMSC RA (F) 13 - 1.6 Loss of Containment (oil product) Refer also to FP PMSC RA (F&amp;T)5</a>	Loss of Containment (Oil Product)	3	6	6	3	2	4	4	4	4
116	<a href="#">FP PMSC RA (F) 01 - 1.2 Contact</a>	Contact	2	6	4	2	5	5	4	4	4
116	<a href="#">FP PMSC RA (F) 11 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2	4	6	6	3	3	4	4	4
116	<a href="#">FP PMSC RA (F) 12 - 1.3 Grounding</a>	Grounding	2	8	2	6	1	5	3	5	4
116	<a href="#">FP PMSC RA (F&amp;T) 09 - 1.2 Pipeline / Cable Damage</a>	Pipeline / Cable Damage	2	6	2	6	2	5	4	5	4
116	<a href="#">FP PMSC RA (F) 14 - 1.3 Grounding</a>	Grounding	4	4	4	4	4	4	4	4	4
116	<a href="#">FP PMSC RA (F) 16 - 1.3 Grounding</a>	Grounding	4	4	4	4	4	4	4	4	4.00
126	<a href="#">FP PMSC RA (T) 04 - 1.1 Collision</a>	Collision	2	4	2	3	5	5	5	5	3.875
126	<a href="#">FP PMSC RA (T) 04 - 1.6 Loss of Containment (Oil Products)</a>	Loss of Containment (Oil Products)	2	4	4	4	3	4	5	5	3.875
126	<a href="#">FP PMSC RA (F&amp;T) 04 - 1.2 Contact</a>	Contact	3	6	3	3	3	5	4	4	3.875
126	<a href="#">FP PMSC RA (F&amp;T) 05 - 1.2 Contact</a>	Contact	3	6	3	3	3	5	4	4	3.875
126	<a href="#">FP PMSC RA (F) 01 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	4	3	3	5	5	3	5	3.875
126	<a href="#">FP PMSC RA (F) 02 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	6	6	2	3	4	4	3.875
126	<a href="#">FP PMSC RA (F) 03 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	6	6	2	3	4	4	3.875
126	<a href="#">FP PMSC RA (F) 09 - 1.3 Grounding</a>	Grounding	2	6	2	6	1	5	4	5	3.875
126	<a href="#">FP PMSC RA (F&amp;T) 06 - 1.5 Loss of Containment</a>	Loss of Containment	2	4	6	6	2	3	4	4	3.875
126	<a href="#">FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	6	3	3	3	5	5	3.875
126	<a href="#">FP PMSC RA (F&amp;T) 08 - 1.1 - Collision / contact</a>	Collision / Contact	6	4	2	6	5	3	1	4	3.875
137	<a href="#">FP PMSC RA (T) 04 - 1.3 Grounding</a>	Grounding	2	4	4	4	2	4	5	5	3.75
137	<a href="#">FP PMSC RA (T) 02 - 1.1 Collision</a>	Collision	4	6	2	4	3	4	3	4	3.75
137	<a href="#">FP PMSC RA (T) 05 - 1.1 Collision</a>	Collision	4	4	4	4	4	5	2	3	3.75
137	<a href="#">FP PMSC RA (T) 02 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	6	3	2	4	4	5	3.75
137	<a href="#">FP PMSC RA (F) 07 - 1.5 Fire / Explosion</a>	Fire / Explosion	4	4	4	4	4	4	3	3	3.75
142	<a href="#">FP PMSC RA (F) 01 - 1.1 Collision</a>	Collision	2	4	2	2	5	5	5	4	3.625
142	<a href="#">FP PMSC RA (T) 01 - 1.1 Collision</a>	Collision	2	4	2	2	5	5	5	4	3.625
142	<a href="#">FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	6	6	2	3	3	3	3.625
145	<a href="#">FP PMSC RA (F) 04 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	3	2	3	5	3	4	4	3.5
145	<a href="#">FP PMSC RA (F) 06 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	3	2	3	5	3	4	4	3.5
145	<a href="#">FP PMSC RA (F) 08 - 1.4 Sinking / Capsize</a>	Sinking / Capsize	4	3	2	3	5	3	4	4	3.5
145	<a href="#">FP PMSC RA (F) 01 - 1.3 Grounding</a>	Grounding	1	3	2	3	5	5	5	4	3.5
145	<a href="#">FP PMSC RA (T) 02 - 1.3 Grounding</a>	Grounding	3	3	3	6	2	4	3	4	3.5
150	<a href="#">FP PMSC RA (T) 01 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	1	2	3	3	3	5	5	5	3.375
151	<a href="#">FP PMSC RA (F) 02 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	3	3	2	4	4	3	4	3.25
151	<a href="#">FP PMSC RA (F) 05 - 1.5 Fire / Explosion</a>	Fire / Explosion	4	4	2	2	4	4	3	3	3.25
153	<a href="#">FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2	4	4	4	2	3	3	3	3.125
153	<a href="#">FP PMSC RA (F) 03 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	3	3	2	4	4	3	3	3.125
153	<a href="#">FP PMSC RA (F) 04 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	3	3	2	4	4	3	3	3.125
153	<a href="#">FP PMSC RA (F) 06 - 1.5 Fire / Explosion</a>	Fire / Explosion	3	3	3	2	4	4	3	3	3.125
153	<a href="#">FP PMSC RA (F) 11 - 1.3 Grounding</a>	Grounding	2	4	2	2	3	4	4	4	3.125



153	<a href="#">FP PMSC RA (T) 05 - 1.3 Grounding</a>	Grounding	2	2	4	6	1	1	4	5	3.125
153	<a href="#">FP PMSC RA (T) 01 - 1.2 Contact</a>	Contact	1	3	2	1	5	5	4	4	3.125
153	<a href="#">FP PMSC RA (F&amp;T) 07 - 1.2 - Collision / contact</a>	Collision / Contact	3	2	1	1	5	5	3	5	3.125
161	<a href="#">FP PMSC RA (F&amp;T) 02 - 1.6 Man Overboard / Personal Injury</a>	Man Overboard / Personal Injury	4	2	2	4	5	1	1	5	3
161	<a href="#">FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2	2	4	4	2	3	3	4	3
161	<a href="#">FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2	2	4	4	2	3	3	4	3
164	<a href="#">FP PMSC RA (T) 06 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	3	3	6	3	1	1	3	3	2.875
164	<a href="#">FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product)</a>	Loss of Containment (Oil Product)	2	2	6	4	1	1	4	3	2.875
166	<a href="#">FP PMSC RA (T) 06 - 1.3 Grounding</a>	Grounding	2	2	2	2	3	5	2	3	2.625
166	<a href="#">FP PMSC RA (F&amp;T) 08 - 1.2 - Swamping / interaction / turbulence</a>	Swamping / interaction / turbulence	4	2	2	2	5	1	1	4	2.625

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC (R) 2/03	<b>Original Date</b> Jul-13
<b>Risk Ranking - Category</b>	<b>Review Due</b> Ongoing	<b>Revised By / Date</b> MM / August 2015



**FORTH PORTS LIMITED**  
**Risk Assessment**

INSERT TITLE											
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)				Risk scored at Residual level (Worst Credible)			
				Likelihood	Overall Risk			Likelihood	Overall Risk		
					People	Property	Environment		Business	People	Property
1.1											
1.2											
1.3											
1.4											
1.5											
				<b>Risk Ranking</b>							

## Risk Assessment Scoring Matrix

### LIKELIHOOD

1 = Extremely unlikely (More than 100 years),  
 2 = Remote (10 - 99 years),  
 3 = Reasonably likely (1 - 9 years),  
 4 = Likely (Once per Year)  
 5 = Frequent (More than once per year)

### CONSEQUENCE

#### PEOPLE:

1 = None,  
 2 = Minor, single slight Injury,  
 3 = Slight, multiple moderate or single major injury,  
 4 = Serious, multiple major injuries or single fatality,  
 5 = Major, more than 1 fatality

#### PROPERTY:

1 = negligible < £2000,  
 2 = Minor > £2000,  
 3 = Moderate >£20,000,  
 4 = Serious, > £200,000  
 5 = major, > £2,000,000

#### ENVIRONMENT:

1 = localised spill < £2000,  
 2 = Minor spill Tier 1 local response,  
 3 = Moderate spill, Tier 2 some outside assistance,  
 4 = Moderate spill, Tier 2 greater outside assistance,  
 5 = Major spill, Tier 3 national response

#### BUSINESS:

1 = Negligible impact < £2000,  
 2 = Minor impact > £2000,  
 3 = Moderate impact > £20,000, bad local publicity, short term reduction of activity.  
 4 = Serious Impact, >£200,000, bad widespread publicity, temporary Port Facility shutdown.  
 5 = Major impact, > £2,000,000, Port facility Closes for more than 1-2 days.

### OVERALL RISK

	5	5	10	15	20	25
	4	4	8	12	16	20
Likelihood	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Consequence				

**Red indicates last Reviewed**

**AMBER** Hazards with risk factors within these bands (6 - 10) are termed "consider". These lower risk factors are considered acceptable, but still need careful monitoring to ensure that everything has been done to reduce the consequences and likelihood.

**GREEN** The lower numbers(5 and below) in the matrix are considered "low-risk", but should still be monitored to ensure that controls remain effective.



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth River Passage - Standard Vessel														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions Transiting FCBC Construction Zone	Pilotage FTNS Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	4	8	4	4	2	10	10	10	8	7.25
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Transiting FCBC Construction Zone	Pilotage FTNS Forth Byelaw & General Directions (Specifically those relevant to the bridges) Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	3	3	6	3	6	1	5	5	4	5	4.625
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Transiting FCBC Construction Zone	Pilotage FTNS Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	2	4	4	6	1	5	5	5	5	4.5
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule	1	5	5	4	4	1	5	5	5	4	4.625
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	3	6	9	6	9	2	10	10	10	10	8.75
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions Damage to Pipeline	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Vetting (Tankers) Marine Guidelines & Port Information	2	2	4	6	6	1	3	5	5	5	4.5

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 1/05	<b>Risk Assessment Team / Date</b> CHM, MM, HMFO, HMF1, HMDD, Man Tow&PV / Oct 2012
<b>Risk Assessment - Forth River Passage (Standard Vessel)</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> CHM, SHM, HMF1, MMD, MT&PV, DHM / Apr-17



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth River Passage - Standard Vessel														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions Transiting FCBC Construction Zone	Pilotage FTNS Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	4	8	4	4	2	10	10	10	8	7.25
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Transiting FCBC Construction Zone	Pilotage FTNS Forth Byelaw & General Directions (Specifically those relevant to the bridges) Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	3	3	6	3	6	1	5	5	4	5	4.625
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Transiting FCBC Construction Zone	Pilotage FTNS Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	2	4	4	6	1	5	5	5	5	4.5
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule	1	5	5	4	4	1	5	5	5	4	4.625
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	3	6	9	6	9	2	10	10	10	10	8.75
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions Damage to Pipeline	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Vetting (Tankers) Marine Guidelines & Port Information	2	2	4	6	6	1	3	5	5	5	4.5

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 1/05	<b>Risk Assessment Team / Date</b> CHM, MM, HMFO, HMF1, HMDD, Man Tow&PV / Oct 2012
<b>Risk Assessment - Forth River Passage (Standard Vessel)</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> CHM, SHM, HMF1, MMD, MT&PV, DHM / Apr-17



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Console Controller Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information	3	6	9	6	6	2	6	6	6	6	6.375
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Console Controller Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Quay edge 'cargo clear' demarkation Restricted Air Draft Procedures Cranes properly stowed on quayside Swing Bridge Procedure Forth Ports H&S Procedures	5	5	5	5	5	2	6	8	6	8	6
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Loss of containment (Dock Level)	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Console Controller Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) PVM Document amended (Extreme Breadth)	3	3	6	6	3	2	6	8	8	10	6.25
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	1	4	4	5	4	1	4	4	5	5	4.375
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	1	3	3	3	2	1	4	4	3	4	3.25
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	3	3	3	6	6	1	2	3	4	4	3.875
1.7	Loss of Dock Level (Lock Gate Operations)	Technical Failure Human Error Environmental Conditions Structural Failure	Lockgate operational procedures Port Planned Maintenance system Lock Gates - Interlocks to prevent opening all lock gates simultaneously Training / Auditing of Port Staff	3	3	3	3	9	1	5	5	4	5	4.625

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 2/03	<b>Risk Assessment Team / Date</b> MM, HMFO / 3rd Dec2012
<b>Risk Assessment - Port of Leith</b>	<b>Review Due</b> May-19	<b>Revised By / Date</b> CHM, SHM, HMF, MMD, MT&PV, DHM / Apr-17



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Rosyth - Arrival / Sailing No1 Rosyth Channel Buoy to Berth															
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)				Risk scored at Residual level (Worst Credible)				Hazard Risk Score			
				Overall Risk				Overall Risk							
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property		Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions Transiting FCBC Construction Zone	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	4	6	4	4	4	1	5	5	4	4	4.5
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction Transiting FCBC Construction Zone	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Restricted Air Draft Procedures Cranes / cargo properly stowed on quayside Forth Ports H&S Procedures FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	4	6	4	2	2	1	5	5	4	4	4.25
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Transiting FCBC Construction Zone	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (including MCA Bulk-handling Regulations) FCBC Exclusion Zones FCBC Marine Controller FCBC SMS & Procedures	2	2	6	4	6	6	1	4	4	4	4	4.25
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	1	4	4	5	4	4	1	4	4	5	5	4.375
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	1	3	3	3	2	2	1	4	4	3	3	3.125
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	3	3	3	6	6	6	2	4	6	8	8	5.5

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP-PMSC-RA (F) 3/04	<b>Risk Assessment Team / Date</b> MMI, HMFO / 9th Jan 2013
<b>Risk Assessment - Port of Rosyth</b>	<b>Review Due</b> Mar-19	<b>Revised By / Date</b> CHM, SHM, HMF, MMD, MT&PV, DHM / Apr-17



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Methil - Arrival / Sailing Methil Pilot Station to Berth															
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score	
				Likelihood	Overall Risk				Likelihood	Overall Risk					
					People	Property	Environment	Business		People	Property	Environment	Business		
1.1	Collision with Small Commercial Vessel / Leisure vessel	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information	2	4	4	2	4	2	2	10	6	6	6	5.25
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Dock Gatemen Procedures	5	5	10	5	5	2	2	6	8	6	6	6.375
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) Dock gate procedure	2	2	4	4	2	2	2	4	6	6	6	4.25
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	dockgate operational procedures Port Planned Maintenance system Training / Auditing of Port Staff Dock gate procedure	1	4	3	2	3	1	1	5	3	4	4	3.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	1	3	3	3	2	1	1	4	4	3	3	3.125
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	3	3	3	6	6	1	1	2	3	3	3	3.625
1.7	Loss of Dock Level (Lock Gate Operations)	Technical Failure Human Error Environmental Conditions	Dockgate operational procedures Port Planned Maintenance system Training / Auditing of Port Staff Dock gate procedure	3	3	3	3	3	2	2	2	6	6	6	4

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 4/03	<b>Risk Assessment Team / Date</b> HMFO, HMDD, MM / 16th Jan 2013
<b>Risk Assessment - Port of Methil</b>	<b>Review Due</b> Feb-19	<b>Revised By / Date</b> CHM, SHM, HMF1, MMD, MT&PV, DHM / Apr-17





**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Methil SE Berth - Arrival/Sailing Methil Pilot Station to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Overall Risk					Overall Risk					
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information External standby tugs audited and issued with restricted towage licence for emergencies.	2	4	4	4	4	2	6	6	6	6	5
1.2	Contact	Technical Failure Human Error Environmental Conditions Failure of Aids to Navigation Quayside / Seabed Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering SE Quayside Regulations & Risk Assessment External standby tugs audited and issued with restricted towage licence for emergencies.	4	8	8	4	4	2	6	6	6	6	6
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule (By Operator) Marine Guidelines & Port Information SE Quayside Regulations & Risk Assessment	3	3	6	6	6	2	6	6	6	8	5.875
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule (By Operator) Marine Guidelines & Port Information External standby tugs audited and issued with restricted towage licence for emergencies.	1	4	4	5	4	1	4	4	5	5	4.375
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	2	4	4	2	2	1	4	4	3	3	3.25
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule (By Operator) Marine Guidelines & Port Information	2	2	4	4	4	1	2	3	3	3	3.125

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 5/03	<b>Risk Assessment Team / Date</b> HMFO, HMDD, MM / 23rd Jan 2013
<b>Risk Assessment - Methil SE Berth</b>	<b>Review Due</b> Feb-19	<b>Revised By / Date</b> CHM, SHM, HMF, MMD, MT&PV, DHM / Apr-17



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Kirkcaldy - Arrival / Sailing Close Approaches of Dock to Berth															
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score	
				Likelihood	Overall Risk				Likelihood	Overall Risk					
					People	Property	Environment	Business		People	Property	Environment	Business		
1.1	Collision with Small Commercial Vessel / Leisure vessel	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information	2	4	4	2	4	2	2	10	6	6	6	5.25
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Additional fenders on West breakwater	4	4	4	4	4	2	2	6	6	6	6	5
1.3	Grounding Refer also to: Risk Assessment (F&T) 7	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage (Pilot briefed with latest survey) Passage plan / berthing plan – master / pilot information exchange FTNS Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) Fixed Lighting on East Pier	2	2	4	4	2	2	2	6	8	8	8	5.25
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	1	4	3	2	3	1	1	5	3	4	4	3.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	1	3	3	3	2	1	1	4	4	3	3	3.125
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	3	2	2	4	4	1	1	2	3	3	4	3

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 6/04	<b>Risk Assessment Team / Date</b> HMFO, HMDD, MM / 23rd Jan 2013
<b>Risk Assessment - Port of Kirkcaldy</b>	<b>Review Due</b> Mar-19	<b>Revised By / Date</b> CHM, SHM, HMFI, MMD, MT&PV, DHM / Apr-17

Dundee - Feb 2018

Red indicates last Reviewed



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Burntisland - Arrival / Sailing Close Approaches of Dock to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions Location of Yacht Club	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information Dockgatemn Procedures	3	4	9	6	6	2	8	8	6	8	6.875
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Dock Gatemen Procedures	5	5	10	5	5	2	4	8	6	6	6.125
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) Gate Procedure	3	3	6	6	6	2	6	6	6	6	5.625
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Dock Gate Procedure	2	4	6	4	6	1	5	4	3	4	4.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	2	4	4	4	4	1	4	4	3	3	3.75
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	4	4	4	8	8	2	4	6	6	6	5.75
1.7	Loss of Dock Level (Lock Gate Operations)	Technical Failure Human Error Environmental Conditions	Dockgate operational procedures Port Planned Maintenance system Training / Auditing of Port Staff Dock Gate Procedure	3	3	3	3	3	2	2	6	6	6	4

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 7/03	<b>Risk Assessment Team / Date</b> HMFO, MM / 16th Jan 2013
<b>Risk Assessment - Port of Burntisland</b>	<b>Review Due</b> May-19	<b>Revised By / Date</b> MMT, Apr 2015



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Inverkeithing - Arrival / Sailing Saint David's Beacon to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Overall Risk					Overall Risk					
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information	2	4	6	4	4	1	5	5	4	4	4.5
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tugs, use of; minimum towage requirements Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures	2	4	3	3	3	2	6	8	6	6	4.875
1.3	Grounding Refer also: Risk Assessment (F&T) 7	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Tidal Monitoring Tugs, use of; minimum towage requirements Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) NABSA Procedure	2	2	4	4	2	2	4	6	6	8	4.5
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	1	4	3	2	3	1	5	3	4	4	3.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	2	6	6	4	4	1	4	4	3	4	4.375
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	2	2	2	4	4	1	2	3	3	4	3

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 8/03	<b>Risk Assessment Team / Date</b> HMFO, HMDD, MM / 23rd Jan 2013
<b>Risk Assessment - Inverkeithing</b>	<b>Review Due</b> Jan-19	<b>Revised By / Date</b> MMT, Apr 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Braefoot Jetty - Arrival / Sailing Eastern Limits to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions for Navigation Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information Towage Guidelines Jetty Regulations Notice to Mariners Marine Safety Alerts	2	6	6	2	4	1	5	5	5	5	4.75
1.2	Contact	Technical Failure Human Error Environmental Conditions Failure of Aids to Navigation Jetty Obstruction	Pilotage (Within compulsory pilotage Area) Passage plan / berthing plan – master / pilot information exchange FTNS Towage Guidelines Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Monitoring and Tidal Predictions / Monitoring Marine Guidelines & Port Information Fendering Jetty Regulations Jetty Supervisor Marine Safety Alerts Notice to Mariners	3	3	6	3	6	2	6	10	10	10	6.75
1.3	Grounding	Technical Failure Human Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage (Within compulsory pilotage Area) Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions for Navigation Towage Guidelines Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Monitoring and Tidal Predictions / Monitoring Emergency Plans / OPRC Notice to Mariners Survey / dredging programme / Schedule Marine Guidelines & Port Information Jetty Regulations	2	2	6	2	6	1	1	5	4	5	3.875
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Jetty Regulations	1	3	5	5	5	1	3	5	5	5	4.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage (Within compulsory pilotage Area) FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Jetty Regulations	2	6	6	2	6	1	5	5	5	5	5
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage (Within compulsory pilotage Area) FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Jetty Regulations	2	4	4	6	6	1	3	3	5	5	4.5

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 9/04	<b>Risk Assessment Team / Date</b> HMFO, HMD, MM / 23rd Jan 2013
<b>Risk Assessment - Braefoot Jetty</b>	<b>Review Due</b> Jan-19	<b>Revised By / Date</b> MMT April 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Grangemouth - Arrival/Sailing Hen & Chickens to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Human Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information Towage Guidelines Diversionary Channel Ship Specific Towage Requirements (IPOS Entries) Notice to Mariners Jetty / Terminal Guidelines STS Operations Manual	2	4	6	6	6	1	5	5	5	5	5.25
1.2	Contact	Technical Failure Human Error Environmental Conditions Failure of Aids to Navigation Quayside Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Towage Guidelines Forth Ports Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Restricted Air Draft Procedures Cranes properly stowed on quayside Dockhead Staff Aids to Navigation Maintenance & Verification Programme Ship Specific Towage Requirements (IPOS Entries) Notice to Mariners STS Operations Manual Jetty / Terminal Guidelines	5	5	10	5	5	2	6	10	8	10	7.375
1.3	Grounding	Technical Failure Human Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Unknown Underwater Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions Towage Guidelines Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Monitoring & Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) Ship Specific Towage Requirements (IPOS Entries)	3	3	6	3	6	2	2	10	6	10	5.75
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Cargo operations procedures (Including MCA Bulk-handling Regulations) Jetty / Terminal Guidelines	1	4	3	4	5	1	5	5	5	5	4.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Ports Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Jetty/Terminal Guidelines	2	4	4	4	4	2	10	10	8	10	6.75
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Ports Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Bunkering Procedure Cargo operations procedures (Including MCA Bulk-handling Regulations)	3	3	3	6	3	1	3	3	5	5	3.875
1.7	Loss of Dock Level	Technical Failure Human Error Environmental Conditions	Lockgate operational procedures Port Planned Maintenance system Lock Gates - Interlocks to prevent opening all lock gates simultaneously Training / Auditing of Port Staff Impounding Pumps	2	4	4	4	4	1	3	5	3	5	4

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 10/04	<b>Risk Assessment Team / Date</b> DMM, HMF1 / 19th Dec2012
<b>Risk Assessment - Port of Grangemouth Hen &amp; Chickens to Berth</b>	<b>Review Due</b> Feb-19	<b>Revised By / Date</b> MMT Apr 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Crombie Berthing/Sailing														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Human Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions for Navigation Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information Towage Guidelines Ship Specific Towage Requirements (IPOS Entries)	2	4	6	6	6	1	5	5	4	4	5
1.2	Contact	Technical Failure Human Error Environmental Conditions Failure of Aids to Navigation Jetty Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Towage Guidelines Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Fendering Restricted Air Draft Procedures Cranes properly stowed on quayside Ship Specific Towage Requirements (IPOS Entries)	3	6	6	3	3	2	6	8	8	8	6
1.3	Grounding	Technical Failure Human Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Unknown Underwater Obstruction	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions for Navigation Towage Guidelines Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Monitoring & Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging programme / Schedule Marine Guidelines & Port Information Ship Specific Towage Requirements (IPOS Entries)	2	2	4	2	2	1	3	4	4	4	3.125
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	1	4	5	3	5	1	4	5	3	5	4.25
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Jetty/Terminal Guidelines	3	6	6	3	6	1	5	5	4	5	5
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Bunkering Procedure	2	2	4	6	6	1	3	3	4	4	4

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 11/03	<b>Risk Assessment Team / Date</b> DMM, HMFI / 19th Dec2012
<b>Risk Assessment - Crombie</b>	<b>Review Due</b> Feb-19	<b>Revised By / Date</b> MMT, Apr 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Hound Point - Arrival/Sailing Eastern Limits to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions for Navigation Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information Towage Guidelines Hound Point Marine Guidelines Notice to Mariners Marine Safety Alerts	2	2	6	2	6	1	3	5	5	5	4.25
1.2	Contact	Technical Failure Human Error Environmental Conditions Failure of Aids to Navigation Jetty Obstruction	Pilotage (Within compulsory pilotage Area) - 2 Pilots and PPU Passage plan / berthing plan – master / pilot information exchange FTNS Towage Guidelines Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Monitoring and Tidal Predictions / Monitoring Marine Guidelines & Port Information Fendering Hound Point Marine Guidelines Notice to Mariners Marine Safety Alert	4	4	8	4	8	2	6	10	8	10	7.25
1.3	Grounding	Technical Failure Human Error Environmental Conditions Surveying Omission Failure of Aids to Navigation Unknown Underwater Obstruction	Pilotage (Within compulsory pilotage Area) - 2 Pilots Passage plan / berthing plan – master / pilot information exchange FTNS Forth Ports Byelaws & General Directions for Navigation Towage Guidelines Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Monitoring and Tidal Predictions / Monitoring Emergency Plans / OPRC Notice to Mariners Survey / dredging programme / Schedule Marine Guidelines & Port Information Hound Point Marine Guidelines	2	2	8	2	6	1	1	5	3	5	4
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) -2 Pilots FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Hound Point Marine Guidelines	1	3	5	5	5	1	3	5	5	5	4.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Hound Point Marine Guidelines	3	6	9	3	9	1	5	5	5	5	5.875
1.6	Loss of Containment (Oil Products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Hound Point Marine Guidelines	2	4	4	6	6	1	3	3	5	5	4.5

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 12/04	<b>Risk Assessment Team / Date</b> DMM, HMF1 / 19th Dec2012
<b>Risk Assessment - Houndpoint Arrival / Sailing Eastern Limits to Berth</b>	<b>Review Due</b> Mar-19	<b>Revised By / Date</b> MMT Apr 2017





**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Cruise Vessels at Anchorage (Hound Point / Newhaven)														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Dragging Anchor	Environmental Conditions Bridge Team Error Technical Failure	Designated and Anchorages FTNS Weather Forecasting / Tidal Predictions Byelaws & General Directions Towage Pilot onboard. Emergency Plans / OPRC Standby Tug or Demonstrated manoeuvrability as per NtM (Hound Point)	5	5	10	5	5	1	4	5	5	5	5.5
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Dragging Anchor	Pilot onboard FTNS Towage Byelaws & General Directions Weather Forecasting / Tidal Predictions Designated and Proven Anchorages Notice to Mariners Emergency Plans / OPRC Standby Tug or Demonstrated manoeuvrability as per NtM (Hound Point)	2	6	6	4	6	1	5	5	5	5	5.25
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Dragging Anchor	Pilot onboard Master / pilot information exchange FTNS Towage Weather Forecasting / Tidal Predictions & Tidal Monitoring Designated Anchorages Emergency Plans / OPRC Standby Tug or Demonstrated manoeuvrability as per NtM (Hound Point) Surveying Schedule	2	4	6	6	8	1	5	5	5	5	5.5
1.4	Sinking / Capsize	Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilot onboard FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Standby Tug or Demonstrated manoeuvrability as per NtM (Hound Point)	1	5	5	5	5	1	5	5	5	5	5
1.5	Fire / Explosion	Contact Grounding Human Error Technical Failure Loss of Containment	Pilot onboard FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Local Standby Tug (Hound Point)	3	6	6	6	6	1	5	5	5	5	5.5
1.5	Loss of Containment (Oil Products) - Refer also to FP PMSC RA (F&T)5	Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilot Onboard FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Bunkering Procedure	3	3	6	6	3	1	2	4	4	4	4

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 13/04	<b>Risk Assessment Team / Date</b> HMFO, MM, DMM, HMD, MT&PV / 13th Feb 2013
<b>Risk Assessment - Cruise Vessels at Anchorage (Hound Point / Newhaven)</b>	<b>Review Due</b> Mar-19	<b>Revised By / Date</b> MMT Apr 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth - River Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workboats, Pilot Vessels etc)														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Byelaws & General Directions (GD19) FTNS Weather Forecasting and Tidal Predictions Marine Guidelines & Port Information Crew training & Certification Towage Guidelines Notice to Mariners <u>Liaison with Local Authorities &amp; Boat Clubs</u>	3	3	6	6	3	2	8	8	6	8	6
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Floating Debris	FTNS Byelaws & General Directions (GD19) Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Crew training & Certification	5	5	10	5	5	2	10	8	8	6	7.125
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Uncharted Object	FTNS Weather Forecasting / Tidal Predictions Byelaws & General Directions (GD19) Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Towage Guidelines <u>Crew training &amp; Certification</u>	3	6	6	6	6	2	6	8	6	8	6.5
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Byelaws & General Directions Marine Guidelines & Port Information Crew training & Certification Towage Guidelines	1	5	5	4	5	1	5	5	4	5	4.75
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Crew training & Certification Good Housekeeping Towage Guidelines Bunkering Procedures <u>Hot Work Permits</u>	4	4	4	4	8	2	6	6	4	6	5.25
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Bunkering Procedures Crew training & Certification Towage Guidelines	5	5	5	5	5	2	6	4	6	6	5.25

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 14/04	<b>Risk Assessment Team / Date</b> MT&PV, HMFO, MM, DMM, HMD / 13TH Feb 2013
<b>Risk Assessment - Forth - River Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workboats, Pilot Vessels etc)</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> MMT Apr 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth Bridge Construction Operations														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions Dragging Anchor	Byelaws & General Directions FTNS Weather Forecasting and Tidal Predictions Reduced Visibility Procedure - FCBC Marine Guidelines & Port Information Crew training & Certification Towage Guidelines Notice to Mariners Marine Controller - FCBC Construction Exclusion Zones FCBC SMS FCBC Barge Method Statements	2	4	6	4	4	1	4	4	3	4	4.125
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure & Offshore/Shore Obstructions on the Quay Floating Debris Dragging Anchor	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Crew training & Certification Marine Controller - FCBC Reduced Visibility Procedure - FCBC FCBC SMS	5	5	10	5	5	1	4	4	3	3	4.875
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Uncharted Object Dragging Anchor	FTNS Weather Forecasting / Tidal Predictions Byelaws & General Directions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Towage Guidelines Crew training & Certification FCBC SMS Marine Controller - FCBC	5	5	10	5	10	1	3	4	3	4	5.5
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Byelaws & General Directions Marine Guidelines & Port Information Crew training & Certification Towage Guidelines	2	8	8	4	8	1	5	5	3	5	5.75
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Crew training & Certification Good Housekeeping Towage Guidelines Bunkering Procedures Hot Work Permits FCBC SMS	5	10	10	5	10	1	5	5	3	4	6.5
1.6	Loss of Containment	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Crew training & Certification Towage Guidelines FCBC Bunkering Procedure - Hours of Darkness	5	5	5	10	5	1	2	2	3	3	4.375

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 15/02	<b>Risk Assessment Team / Date</b> MM, HMFL, CHM / December 2013
<b>Risk Assessment - Forth Bridge Construction Operations</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> MMT, April 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Cruise Vessel Tender Operations (Newhaven / Hound Point)														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Byelaws & General Directions FTNS Weather Forecasting, Tidal Predictions & Monitoring Marine Guidelines & Port Information Crew training & Certification Notice to Mariners Approved & Certificated tender vessels Tender Pro-forma & Passage Planning	3	6	3	3	3	2	8	8	4	8	5.375
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Floating Debris	FTNS Byelaws & General Directions Weather Forecasting / Tidal Predictions & Monitoring Marine Guidelines & Port Information Notice to Mariners Crew training & Certification Fendering Approved & Certificated Tender vessels Tender Traffic Control Procedures Tender Proforma and Passage Planning	5	5	5	5	5	2	8	8	4	6	5.75
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Uncharted Object	FTNS Weather Forecasting / Tidal Predictions Byelaws & General Directions Emergency Plans Notice to Mariners Survey / Programme / Schedule Marine Guidelines & Port Information Crew training & Certification Tender Proforma and Passage Planning Approved & Certificated Tender vessels	4	4	4	4	4	2	4	4	4	4	4
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / Programme / Schedule Byelaws & General Directions Marine Guidelines & Port Information Crew training & Certification	1	5	5	2	5	1	5	5	3	5	4.375
1.5	Fire	Collision Contact Grounding Human Error Technical Failure Loss of Containment	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Crew training & Certification Good Housekeeping Bunkering Procedures	3	3	3	3	6	2	8	8	4	8	5.375
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Bunkering Procedures Crew training & Certification Tender Proforma	3	3	3	3	3	2	6	6	6	4	4.25

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 16/02	<b>Risk Assessment Team / Date</b> MM, DMM, HMFO March 2014
<b>Risk Assessment - Cruise Vessel Tender Operations (Hound Point / Newhaven)</b>	<b>Review Due</b> May-19	<b>Revised By / Date</b> MMT April 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Tay River Passage - Standard Vessel														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Marine Guidelines & Port Information	1	2	4	2	2	1	5	5	5	4	3.625
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions (Specifically those relevant to the bridges) Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information AIS Beacon on Horseshoe Buoy	1	1	3	2	1	1	5	5	4	4	3.125
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Failure of Aids to Navigation	Pilotage FTNS Aids to Navigation Maintenance & Verification Programme Weather Forecasting / Tidal Predictions Emergency Plans / OPRC Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information	2	2	6	4	6	2	10	10	10	8	7
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	1	4	5	4	4	2	10	10	10	8	6.875
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	3	6	6	6	3	1	5	5	3	5	4.875
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Vetting (Tankers) Marine Guidelines & Port Information	1	1	2	3	3	1	3	5	5	5	3.375

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (T) 1/04	<b>Risk Assessment Team / Date</b> DMM, HMD 13th Dec 2012
<b>Risk Assessment - River Passage Tay (General)</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> MMT April 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Dundee - Arrival/Sailing Close Approaches to River Berths														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Byelaws & General Directions FTNS Weather Forecasting and Tidal Predictions	2	4	6	2	4	1	3	4	3	4	3.75
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Quayside Clear from Obstructions Port Assistant AIS Beacon on Horseshoe Buoy	4	8	8	4	8	2	6	6	8	8	7
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission	Pilotage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information	3	3	3	3	6	1	2	4	3	4	3.5
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Tay Byelaws & General Directions Marine Guidelines & Port Information	1	4	4	3	4	1	5	5	5	5	4.375
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Survey / dredging Programme / Schedule	3	9	9	6	6	1	5	5	5	8	6.625
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information	3	3	3	6	3	1	2	4	4	5	3.75

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA(T) 2/03	<b>Risk Assessment Team / Date</b> DMM, HMD 13th Dec 2012
<b>Risk Assessment - Dundee</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> MMT, April 2017
<b>Arrival/Sailing Port Approaches to</b>		



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Dundee - Large Vessel - Arrival/Sailing Port Limits to Berth															
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Overall Risk					Overall Risk					Hazard Risk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business		
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Byelaws & General Directions FTNS Weather Forecasting and Tidal Predictions Licenced Towing Marine Guidelines & Port Information Large Vessel Guidelines Towage Guidelines	1	2	4	2	3	1	5	5	5	5	3.875	Most Likely: Collision with leisure craft Worst Credible: Collision with berthed cruise vessel
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	Licensed Towing Pilotage FTNS Tay Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Large Vessel Guidelines	3	3	9	3	6	1	3	5	4	4	4.625	Most Likely: Heavy landing on Quay with minor damage Worst Credible: Extremely heavy landing structural damage to Quay and vessel
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission	Pilotage Licenced Towing FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Large Vessel Guidelines	2	2	4	4	4	1	2	4	5	5	3.75	Most Likely: Grounding on soft material, no loss of containment and vessel able to float off on following tide Worst Credible: Grounding on solid sea bed, loss of containment vessel unable to refloat.
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Tay Byelaws & General Directions Marine Guidelines & Port Information Large Vessel Guidelines	1	5	5	5	5	1	5	5	5	5	5	Most Likely: slow sinking Worst Credible: fast sinking
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Survey / dredging Programme / Schedule Large Vessel Guidelines	2	8	8	6	6	1	5	5	5	5	6	Most Likely: small fire onboard, quickly extinguished Worst Credible: Large tanker uncontrollable fire, vessel total loss.
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Vetting (Tankers) Marine Guidelines & Port Information Large Tanker Guidelines	2	2	4	4	4	1	3	4	5	5	3.875	Most Likely: Ballast water contaminated and discharged causing minimal pollution Worst Credible: Full loss of cargo
1.7	Allision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Byelaws & General Directions FTNS Weather Forecasting and Tidal Predictions Licenced Towing Marine Guidelines & Port Information Large Vessel Guidelines Towage Guidelines	2	2	6	2	4	1	5	5	5	5	4.25	Most Likely: contact with anchored vessel causing minimal damage Worst Credible: contact with jacked-up rig

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (T) 4/03	<b>Risk Assessment Team / Date</b> DMM, HMD 13th Dec 2012
<b>Risk Assessment - Large Tanker Arrival/Sailing Port Limits to Berth</b>	<b>Review Due</b> May-20	<b>Revised By / Date</b> CHM, HMD, HMFL, CM, T&PVM, DMM/FL, May 2018

Red indicates last Reviewed



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Byelaws & General Directions FTNS Weather Forecasting and Tidal Predictions Towage Marine Guidelines & Port Information (River Closed to other Traffic during rig move) Towage Audit Declaration / Tug Vetting	2	4	4	4	4	1	4	5	2	3	3.75
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Communication Error	Towage Pilotage FTNS Tay Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information (River Closed to other Traffic during rig move) Additional Fendering Appointed Towmaster Towage Audit Declaration / Tug Vetting Simulation Trials Horseshoe Buoy Identified by AIS Unit	3	3	9	3	6	1	3	5	3	4	4.5
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission	Pilotage Towage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Towage Audit Declaration / Tug Vetting Contingency Pin Locations Identified Appointed Towmaster Simulation Trials Horseshoe Buoy Identified by AIS Unit	2	2	2	4	6	1	1	1	4	5	3.125
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage Towage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information (River Closed to other Traffic during rig move) Towage Audit Declaration / Tug Vetting Contingency Pin Locations Identified Appointed Towmaster Simulation Trials Horseshoe Buoy Identified by AIS Unit	2	2	4	6	6	1	4	4	4	5	4.375
1.5	Fire / Explosion	Collision Contact Human Error Technical Failure Loss of Containment	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Marine Guidelines & Port Information (River Closed to other Traffic during rig move) Towage Audit Declaration / Tug Vetting Appointed Towmaster	3	6	6	3	6	1	5	5	4	5	5
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information (River Closed to other Traffic during rig move) Towage Audit Declaration / Tug Vetting Appointed Towmaster Bunkering Procedures	2	2	2	6	4	1	1	1	4	3	2.875

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (T) 5/04	<b>Risk Assessment Team / Date</b> DMM, HMD 09th January 2013
<b>Risk Assessment - Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth</b>	<b>Review Due</b> Jan-20	<b>Revised By / Date</b> CHM, HMD January 2018





**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Tay - River Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workboats, Pilot Boats etc.)														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	Byelaws & General Directions (GD13) FTNS Weather Forecasting and Tidal Predictions Marine Guidelines & Port Information Pilot Vessel training & Certification Towage Guidelines Notice to Mariners	3	3	6	6	3	2	8	6	4	8	5.5
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	FTNS Tay Byelaws & General Directions (GD13) Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Pilot Vessel training & Certification AIS Beacon on Horseshoe Buoy	5	5	5	5	5	2	6	6	4	6	5.25
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission	FTNS Weather Forecasting / Tidal Predictions Tay Byelaws & General Directions (GD13) Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Marine Guidelines & Port Information Towage Guidelines Pilot Vessel training & Certification	2	2	2	2	2	1	3	5	2	3	2.625
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage FTNS Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Survey / dredging Programme / Schedule Tay Byelaws & General Directions Marine Guidelines & Port Information Pilot Vessel training & Certification Towage Guidelines	2	6	8	4	6	1	3	4	2	3	4.5
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Survey / dredging Programme / Schedule Pilot Vessel training & Certification Good Housekeeping Towage Guidelines	3	3	3	3	3	2	6	8	4	6	4.5
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Aids to Navigation Maintenance & Verification Programme Notice to Mariners Survey Programme / Schedule Marine Guidelines & Port Information Bunkering Procedures Pilot Vessel training & Certification Towage Guidelines	3	3	3	6	3	1	1	1	3	3	2.875

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (T) 6/03	<b>Risk Assessment Team / Date</b> DMM, HMD 09th January 2013
<b>Risk Assessment - River Tay Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workboats, Pilot Boats etc.)</b>	<b>Review Due</b> Apr-19	<b>Revised By / Date</b> MMT, April 2017



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Vessels at Anchor														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Dragging Anchor	Environmental Conditions Bridge Team Error Technical Failure	Designated and Proven Anchorages FTNS Weather Forecasting / Tidal Predictions Towage Byelaws & General Directions Pilotage Emergency Plans / OPRC	4	4	8	4	4	2	8	10	10	10	7.25
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions	Pilotage FTNS Towage Byelaws & General Directions Weather Forecasting / Tidal Predictions Designated and Proven Anchorages Notice to Mariners Emergency Plans / OPRC	2	4	6	4	6	1	5	5	5	5	5
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission Dragging Anchor	Pilotage Passage plan – master / pilot information exchange FTNS Towage Weather Forecasting / Tidal Predictions & Tidal Monitoring Designated and Proven Anchorages Emergency Plans / OPRC	2	2	4	4	4	1	5	5	5	5	4.25
1.4	Sinking / Capsize	Contact Grounding Technical Failure Failure of Vessel Stability Human Error Environmental Conditions	Pilotage FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions	1	4	5	5	5	1	5	5	5	5	4.875
1.5	Fire / Explosion	Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting	2	6	6	6	4	1	5	5	5	5	5.25
1.6	Loss of Containment (Oil Products)	Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	Pilotage FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Bunkering Procedure	3	6	6	9	6	1	3	5	5	5	5.625

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 1/04	<b>Risk Assessment Team / Date</b> DMM, HMFO, HMF1, HMD, MT&PV / 11th Jan 2013
<b>Risk Assessment - Vessels at Anchor</b>	<b>Review Due</b> Aug-19	<b>Revised By / Date</b> Aug, 2017 - MMT



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Towage Operations														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Capsizing / Flooding	Girting Loss of Stability Grounding Technical Failure Human Error Environmental Conditions Tug Positioning Speed	Towage Guidelines Tug SMS FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Pilotage Crew Training Pre Operations Checks/ Briefings Emergency Tow Release	2	8	8	8	8	1	5	5	4	5	6.375
1.2	Fire	Loss of Containment Grounding Technical Failure Human Error Environmental Conditions	FTNS Tug SMS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Crew Training & Certification Good Housekeeping Towage Guidelines Latest Sound Charts Available	3	3	3	3	6	2	8	8	8	8	5.875
1.3	Contact	Technical Failure Loss of Tow / Towline Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Floating Debris Tug Positioning Speed	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Tug SMS	5	5	10	5	10	2	6	8	8	10	7.75
1.4	Collision	Technical Failure Loss of Tow / Towline Failure Bridge Team Error Environmental Conditions	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Tug SMS	3	3	6	6	3	1	4	4	4	4	4.25
1.5	Grounding	Technical Failure Bridge Team Error Environmental Conditions	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predictions Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Tug SMS	2	4	4	4	6	1	4	5	4	5	4.5
1.6	Man Overboard / Personal Injury	Human Error Technical Failure Environmental Conditions	Crew Training Tug SMS Tug Design Towage Guidelines	2	4	2	2	4	1	5	1	1	5	3

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 2/04	<b>Risk Assessment Team / Date</b> MT&PV, MM, HMFO, DMM, HMD / 13th Feb 2013
<b>Risk Assessment - Towage Operations</b>	<b>Review Due</b> Jan-20	<b>Revised By / Date</b> MMT / Jan - 2018



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Immobilised Vessels (at Anchor or Alongside)														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Contact <a href="#">Refer also to FP PMSC RA (F&amp;T) 1</a>	Technical Failure Human Error Environmental Conditions Dragging Anchor Breaking Away from Moorings	Byelaws & General Directions Weather Forecasting & Monitoring Marine Guidelines & Port Information Standby Tug at Anchor FTNS Extra Moorings	2	4	6	4	4	1	3	4	4	4	4.125
1.2	Grounding <a href="#">Refer also to FP PMSC RA (F&amp;T) 1</a>	Technical Failure Human Error Environmental Conditions Dragging Anchor Breaking Away from Moorings	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting & Monitoring Marine Guidelines & Port Information Notice to Mariners Standby Tug at Anchor Extra Moorings	2	2	6	6	4	1	3	5	4	4	4.25

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b>	<b>Risk Assessment Team / Date</b>
	FP PMSC RA (F&T) 3/04	MM, DMM / 26th Feb 2013
<b>Risk Assessment - Immobilised Vessels</b>	<b>Review Due</b>	<b>Revised By / Date</b>
	Aug-19	Aug, 2017 - MMT



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Bunkering Operations In Dock														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision with bunker vessel and receiving vessel	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring/Unmooring Procedures Terminal Procedures Lock Gates Bunkering Procedures	2	6	6	2	2	1	4	5	4	5	4.25
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Mooring Failure	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring Procedures	3	3	6	3	3	1	3	5	4	4	3.875
1.3	Loss of Conainment (Oil Products)	Technical Failure Human Error Collision Grounding Mooring Failure Sinking Fire/Explosion Contact	Pilotage FTNS - Scheduling, VTS Forth Bylaws & General Directions N To M Emergency Plans / OPRC Weather Forecasting Weather Parameters Fenders either side of manifold Mooring Procedures Bunkering Procedure Vetting (Bunker Vessel) Bunkering Procedures Lock Gates Port Traffic Management	3	3	3	9	9	1	3	3	4	4	4.75
1.4	Fire/Explosion	Technical Failure Human Error Collision Grounding Mooring Failure Sinking Fire/Explosion Contact	Pilotage FTNS - Scheduling, VTS Bylaws & General Directions Notices To Mariners Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedure. Mooring Procedures Vetting (Bunker Vessel)	1	4	4	3	4	1	5	5	4	5	4.25

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 4/04	<b>Risk Assessment Team / Date</b> HMFO, HMF1, MM, HMD, DMM 20th Feb 2013
<b>Risk Assessment - Bunkering Operations In Dock</b>	<b>Review Due</b> Aug-19	<b>Revised By / Date</b> Aug, 2017 - MMT



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Bunkering Operations Tidal Waters														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision with bunker vessel and receiving vessel	Technical Failure Bridge Team Error Environmental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring/Unmooring Procedures Bunkering Procedure	3	9	9	6	6	1	4	5	5	5	6.125
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Mooring Failure	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring Procedures Bunkering Procedure	3	3	6	3	3	1	3	5	4	4	3.875
1.3	Loss of Containment (Oil Products)	Technical Failure Human Error Collision Grounding Mooring Failure Sinking Fire/Explosion Contact	Pilotage FTNS - Scheduling, VTS Bylaws & General Directions N To M Emergency Plans / OPRC Weather Forecasting Weather Parameters Fenders either side of manifold Mooring Procedures Bunkering Procedure Vetting (Bunker Vessel) Oil Pollution response standby vessel	3	6	6	9	9	1	3	3	4	4	5.5
1.4	Fire/Explosion	Technical Failure Human Error Collision Grounding Mooring Failure Sinking Fire/Explosion Contact	Pilotage FTNS - Scheduling, VTS Bylaws & General Directions Notices To Mariners Emergency Plans / OPRC Weather Forecasting Weather Parameters Tugs Bunkering Procedure. Mooring Procedures Vetting (Bunker Vessel) Bunkering Procedure	1	4	4	3	4	1	5	5	5	5	4.375

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 5/04	<b>Risk Assessment Team / Date</b> HMFO, HMF1, MM, HMD, DMM 20th Feb 2013
<b>Risk Assessment - Bunkering Operations Tidal Waters</b>	<b>Review Due</b> Aug-19	<b>Revised By / Date</b> Aug. 2017 - MMT



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - NAABSA Berths														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Contact	Technical Failure Human Error Environmental Conditions	Byelaws & General Directions Weather Forecasting / Tidal Predictions & Monitoring Marine Guidelines & Port Information NAABSA Berth Procedure Welcome Pack	3	6	3	3	6	1	4	5	3	5	4.375
1.2	Capsize/Flooding	Contact Technical Failure Failure of Vessel Stability Human Error Environmental Conditions Changes to seabed conditions / Obstructions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Inspections Survey Programme	1	3	5	3	5	1	5	5	5	5	4.5
1.3	Fire	Reduced Fire Fighting Capability Due to lack of dock water	NAABSA Berth Procedures Emergency Procedures Welcome Pack	2	4	4	1	4	2	10	10	6	10	6.125
1.4	Hull Damage	Debris Obstruction on seabed Changes to seabed gradient Contact	NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme Weather Forecasting / Tidal Predictions & Monitoring Byelaws & General Directions	3	3	9	9	9	2	4	8	8	8	7.25
1.5	Loss of Containment	Human Error Contact Technical Failure Capsizing / Flooding Fire Environmental Conditions Mud Suction	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions & Monitoring Notice to Mariners Bunkering Procedure NAABSA Berth Procedures NAABSA Berth Inspections	2	2	4	6	6	1	2	3	4	4	3.875

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 06/04	<b>Risk Assessment Team / Date</b> DMM, HMFO, HMF, HMD, MT&PV / 11th Jan 2013
<b>Risk Assessment - NAABSA Berths</b>	<b>Review Due</b> Aug-19	<b>Revised By / Date</b> Aug, 2017 - MMT



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Diving Operations														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Swamping / turbulence / interaction	Proximity and/or speed of Passing Traffic	Forth Ports Dive Procedure (Permit) Dive Signals displayed Established Communications FTNS Exclusion Zones Speed Restrictions Notice to Mariners Dive Supervisor Local Monitoring	3	6	4	4	4	1	5	4	2	4	4.125
1.2	Contact / Collision	Proximity and/or Speed of Passing Traffic	Forth Ports Dive Procedure (Permit) Established Communications FTNS Exclusion Zones Notice to Mariners	1	3	2	1	1	1	5	5	3	5	3.125

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 7/02	<b>Risk Assessment Team / Date</b> HMF/HMFO/HMD/MM/CHM 03rd Sep 14
<b>Risk Assessment - Diving Operations</b>	<b>Review Due</b> Aug-20	<b>Revised By / Date</b> MMT, Aug 2018





**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Recreational Events (e.g.swim events)														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Collision / contact	Proximity of non participating craft / vessel	Event Notification Form Notice to Mariners Exclusion Zones (as considered appropriate) FTNS Planning Meetings (Where appropriate) Appropriate Safety Craft Established Communications Localised monitoring by Event Organisers	2	6	4	2	6	1	5	3	1	4	3.875
1.2	Swamping / interaction / turbulence	Proximity of non participating craft / vessel	Event Notification Form Notice to Mariners Exclusion Zones (as considered appropriate) FTNS Planning Meetings (Where appropriate) Appropriate Safety Craft Established Communications Localised monitoring by Event Organisers	2	4	2	2	2	1	5	1	1	4	2.625

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 8/02	<b>Risk Assessment Team / Date</b> HMF/HMFO/HMD/MM/CHM 03rd Sep 14
<b>Risk Assessment - Recreational Events</b>	<b>Review Due</b> Aug-20	<b>Revised By / Date</b> MMT, Aug 2018



**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Forth & Tay - Underwater Cables & Pipelines														
Ref.	Hazard  What can go wrong (Event leading to a consequence)	Causes  How can it go wrong	Controls  Preventative & Reactive (What action & how frequent)	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)					Hazard Risk Score
				Likelihood	Overall Risk				Likelihood	Overall Risk				
					People	Property	Environment	Business		People	Property	Environment	Business	
1.1	Contact	Technical Failure Bridge Team Error Environmental Conditions Dragging Anchor Mooring Failure	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	2	4	6	2	6	1	3	5	4	5	4.375
1.2	Pipeline / Cable Damage	Technical Failure Bridge Team Error Environmental Conditions Dragging Anchor Mooring Failure Contact	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	2	2	6	2	6	1	2	5	4	5	4
1.2	Fire / Explosion	Technical Failure Bridge Team Error Environmental Conditions Dragging Anchor Mooring Failure Contact Loss of Containment	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	1	4	5	4	5	1	4	5	4	5	4.5
1.3	Loss of Containment / Power / Communication	Technical Failure Bridge Team Error Environmental Conditions Dragging Anchor Mooring Failure Contact	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	2	4	6	4	6	1	4	5	4	5	4.75

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F&T) 9/01	<b>Risk Assessment Team / Date</b> CHM/MM 18th Feb 2015
<b>Risk Assessment - Underwater Cables &amp; Pipelines</b>	<b>Review Due</b> Feb-18	<b>Revised By / Date</b>

**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Marine Pollution (Tidal Waters)														
Ref.	Hazard <i>What can go wrong (Event leading to a consequence)</i>	Causes <i>How can it go wrong</i>	Controls <i>Preventative &amp; Reactive (What action &amp; how frequent)</i>	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)				Hazard Risk Score	
				Overall Risk					Overall Risk					
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment		Business
1.1	Loss of Containment (oil product)	Collision Contact Grounding Poor Decision Making Technical Failure	FTNS Bunkering Procedure Byelaws & General Directions Piloting Survey Programme / Schedule Marine Guidelines & Port Information Emergency Plans - OPRC Towage Guidelines Oil Terminal Guidelines Weather / tidal Forecasting & Monitoring Oil Spill Prediction Software Notice to Mariners	5	5	5	10	5	1	3	5	5	5	5.375

FORTH PORTS LIMITED	Document ID FP PMSC RA (F&T) 10/01	Risk Assessment Team / Date CHM, MM, DMM, HMD / 12th August 2015
Risk Assessment - Marine Pollution (Tidal Waters)	Review Due Apr-18	Revised By / Date

**FORTH PORTS LIMITED**  
**Navigational Risk Assessment**

Marine Pollution (Enclosed Dock)														
Ref.	Hazard <small>What can go wrong (Event leading to a consequence)</small>	Causes <small>How can it go wrong</small>	Controls <small>Preventative &amp; Reactive (What action &amp; how frequent)</small>	Risk scored at Residual level (Most Likely)					Risk scored at Residual level (Worst Credible)				Hazard Risk Score	
				Overall Risk					Overall Risk					
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment		Business
1.1	Loss of Containment (oil product)	Collision Contact Grounding Poor Decision Making Technical Failure	FTNS Bunkering Procedure Byelaws & General Directions Pilotage Survey Programme / Schedule Marine Guidelines & Port Information Emergency Plans - OPRC Towage Guidelines Oil Terminal Guidelines Notice to Mariners Lock Gates	5	5	5	5	5	1	3	4	4	4	4.375

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC RA (F) 11/01	<b>Risk Assessment Team / Date</b> CHM, MM, DMM, HMD / 12th August 2015
<b>Risk Assessment - Marine Pollution (Enclosed Docks)</b>	<b>Review Due</b> Apr-18	<b>Revised By / Date</b>