LIST OF PMSC RISK ASSESSMENTS

RISK ASSESSMENT	RISK ASSESSMENT
Number	Name
FP PMSC RA (F)1	Forth River Passage - Standard Vessel
FP PMSC RA (F)2	Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth with Outer Berth works
FP PMSC RA (F)3	Port of Rosyth - Arrival/Sailing No.1 Rosyth Channel Buoy to Berth
FP PMSC RA (F)4	Port of Methil - Arrival/Sailing Methil Pilot Station to Berth
FP PMSC RA (F)5	Methil Energy Park - Arrival/Sailing Methil Pilot Station to Berth
FP PMSC RA (F)6	Port of Kirkcaldy - Arrival/Sailing Close Approaches of Dock to Berth
FP PMSC RA (F)7	Port of Burntisland - Arrival/Sailing Close Approaches of Dock to Berth
FP PMSC RA (F)8	Inverkeithing - Arrival/Sailing Saint Davids Beacon to Berth
FP PMSC RA (F)9	Braefoot Jetty - Arrival/Sailing Eastern Limits to Berth
FP PMSC RA (F)10	Port of Grangemouth - Arrival/Sailing Hen & Chickens to Berth
FP PMSC RA (F)11	Crombie Berthing/Sailing
FP PMSC RA (F)12	Hound Point - Arrival/Sailing Eastern Limits to Berth
FP PMSC RA (F)13	Cruise Vessels at Anchorage
FP PMSC RA (F)14	Forth - River Transit and Berthings/Sailings small comerical craft (tugs, workboats etc.)
FP PMSC RA (F)15	Cruise Vessel Tender Operations (Hound Point / Newhaven)
FP PMSC RA (T)1	Tay River Passage - Standard Vessels (Arrival/Sailing Port Approaches to Berth)
FP PMSC RA (T)5	Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth
FP PMSC RA (T)6	Tay - River Transit and Berthings/Sailings small comerical craft (tugs, workboats etc.)
FP PMSC RA (F&T)1	Forth & Tay - Vessel at Anchor
FP PMSC RA (F&T)2	Forth & Tay - Towage Operations
FP PMSC RA (F&T)3	Forth & Tay - Immobilised Vessels
FP PMSC RA (F&T)4	Forth & Tay - Bunkering Operations in Dock
FP PMSC RA (F&T)5	Forth & Tay - Bunkering Operations in Tidal Waters
FP PMSC RA (F&T)6	Forth & Tay - NAABSA Berths
FP PMSC RA (F&T)7	Forth & Tay - Diving Operations
FP PMSC RA (F&T)8	Forth & Tay - Recreational Events
FP PMSC RA (F&T)9	Forth & Tay - Underwater Cables & Pipelines
FP PMSC RA (F&T)10	Forth & Tay - Marine Pollution (Tidal Waters)
FP PMSC RA (F&T)11	Forth & Tay - Marine Pollution (Enclosed Dock)

PMSC RISK ASSESSMENT - RISK RANKING

Rank	HazardiD	Hazard What can go wrong	Hazard Scoring
1	ED DMOO DA (EGT) OO A A ANII	(Event leading to a consequence)	
	FP PMSC RA (F&T) 02 - 1.4 Allison FP PMSC RA (F) 14 - 1.4 Sinking / Capsize	Allison Sinking / Capsize	8.750
2	FP PMSC RA (F) 14 - 1.4 SIRKING / Capsize FP PMSC RA (F) 15 - 1.1 Collision	Collision	8.5 8.5
4	FP PMSC RA (F) 02 - 1.2 Contact	Contact	8.125
5	FP PMSC RA (T) 06 - 1.2 Contact	Contact	7.875
6	FP PMSC RA (F) 14 - 1.5 Fire / Explosion	Fire / Explosion	7.75
7	FP PMSC RA (F) 01 - 1.5 Fire / Explosion	Fire / Explosion	7.625
7	FP PMSC RA (F) 10 - 1.5 Fire / Explosion	Fire / Explosion	7.625
10		Fire / Explosion Collision	7.625
11	TT TWOCKA (T) 01 - 1.1 COMSION	Contact	7.5
11	FP PMSC RA (F) 14 - 1.2 Contact	Contact	7.375
13		Dragging Anchor	7.25
13	FP PMSC RA (F) 09 - 1.1 Collision	Collision	7.25
13	TT TWOCKA (T) 13 - 1.2 CONIACT	Contact	7.25
	FP PMSC RA (F) 02 - 1.3 Grounding	Grounding	7.125
17	TT TWO TO (Tar) of The Contact Release No. 10 Th	Allison	7
18	TTT WOOTON (TAT) 02 1.0 Grounding	Grounding	6.875
18	11 T MOO THAT (1) OT 11 TOWNING / Superior	Sinking / Capsize Sinking / Capsize	6.875
18	TT TWOCKA (T) 05 - 1.4 SHIKING / Capsize	Sinking / Capsize Sinking / Capsize	6.875
18	TT T MICC TOTAL TOTAL CONTROL TO THE CONTROL THE CONTROL TO THE CONTROL TO THE CONTROL TO THE CONTROL TO THE CO	Grounding	6.875
18	TT TIMES TO THE STORTING	Fire / Explosion	6.875
18	TTT MOOTE (T) OF THE TEXT EXPLOSION	Fire / Explosion	6.875
18	FP PMSC RA (F) 09 - 1.2 Contact	Contact	6.875
26		Loss of Containment (Oil Product)	6.75
26	FP PMSC RA (F) 12 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	6.75
28		Contact	6.625
29	The most art art of the composition of the control	Capsizing / Flooding	6.5
29	FP PMSC RA (F) 05 - 1.1 Collision	Collision	6.5
29	TTT WOOTO (17 00 T.T COMBIOT	Collision	6.5
29 29		Contact Sinking / Capsize	6.5
29	TT T MOO TO T	- '	6.5
35	FP PMSC RA (T) 05 - 1.2 Contact FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations)	Contact Loss of Dock Level (Lock Gate Operations)	6.375
36		Collision	6.25
36	TT THE OTATION OF THE ORIGINAL	Grounding	6.25
36		Fire / Explosion	6.25
36		Collision	6.25
40	FP PMSC RA (F) 14 - 1.1 Collision	Collision	6.125
41	FP PMSC RA (F&T) 07 - 1.1 - Swamping / turbulence / interaction	Swamping / interaction / turbulence	5.875
41	FP PMSC RA (F) 02 - 1.1 Collision	Collision	5.875
41	TT T MOOTHY (1) TE THOTHE / Explosion	Fire / Explosion	5.875
44	11 1 Mod 18 (Fally of The 2000 of Contaminant (on product)	Loss of Containment (Oil Product)	5.75
44	FP PMSC RA (F) 04 - 1.1 Collision	Collision Grounding	5.75
46	FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 13 - 1.2 Contact	Contact	5.625
46		Contact	5.625 5.625
49	TT TWO TOTAL TILE CONTACT	Fire	5.5
49	FP PMSC RA (F&T) 06 - 1.3 Fire	Fire	5.5
49		Loss of Containment (Oil Product)	5.5
49	FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5.5
49	FP PMSC RA (F) 08 - 1.4 Sinking / Capsize	Sinking / Capsize	5.5
49	FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5.5
49	11 1 MSC NA (1) 14 - 1.0 Loss of Containment (on product)	Loss of Containment (Oil Product)	5.5
	FP PMSC RA (F) 01 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5.25
56	11 Times 18 (1) or 110 Granding	Grounding	5.25
	FP PMSC RA (F&T) 02 - 1.5 Collision	Collision	5.125
	FP PMSC RA (F&T) 03 - 1.3 Fire / Explosion FP PMSC RA (F) 09 - 1.5 Fire / Explosion	Fire Fire / Explosion	5.125
	FP PMSC RA (F) 09 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5.125
61		Grounding	5
	FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5
61		Dragging Anchor	5
61		Grounding	5
61		Sinking / Capsize	5
61	TTT MOOTAT(1) OF THE OWNING / CAPOLES	Sinking / Capsize	5
	FP PMSC RA (F) 05 - 1.2 Contact	Contact	4.875
	FP PMSC RA (F&T) 01 - 1.2 Contact	Contact	4.75
69	FP PMSC RA (F&T) 01 - 1.5 Fire / Explosion	Fire / Explosion	4.75
69		Collision / Contact	4.75
69	11 1 Moo Hart (1 at 7 to 11.1 Edob of Cornaminotat (5m 1 Todact)	Loss of Containment (Oil Product) Sinking / Capsize	4.75
69	TTT MOOTHY (1) OF THE OHIGH OUDGES	Contact	4.75
69		Grounding	4.75
69	TT T MOOTE T(T) CO THE OF CATALONS	Sinking / Capsize	4.75
69	TTT MOOTE (T) CO TIT OF MAIN TO CAPOLED	Sinking / Capsize Sinking / Capsize	4.75 4.75
	FP PMSC RA (F) 12 - 1.4 Sinking / Capsize FP PMSC RA (F) 13 - 1.4 Sinking / Capsize	Sinking / Capsize	4.75
	FP PMSC RA (F) 01 - 1.4 Sinking / Capsize	Sinking / Capsize	4.73
	FP PMSC RA (F) 07 - 1.4 Sinking / Capsize	Sinking / Capsize	4.5
79	and the second s	- :	
	FP PMSC RA (F) 08 - 1.1 Collision	Collision	4.5
		Collision Sinking / Capsize	4.5
79 79		L	4.5 4.5

79	FP PMSC RA (T) 01 - 1.3 Grounding	Grounding	4.5
	FP PMSC RA (T) 05 - 1.1 Collision	Collision	4.5
	FP PMSC RA (F&T) 04 - 1.1 Collision with bunker vessel and receiving vessel	vessel	4.375
	FP PMSC RA (F&T) 05 - 1.1 Collision with bunker vessel and receiving vessel	vessel	4.375
	FP PMSC RA (F) 01 - 1.2 Contact	Contact	4.375
	FP PMSC RA (F) 01 - 1.3 Grounding	Grounding	4.375
	FP PMSC RA (F) 02 - 1.7 Loss of Dock Level (Lock Gate Operations)	Loss of Dock Level (Lock Gate Operations)	4.375
	FP PMSC RA (F) 10 - 1.1 Collision	Collision	4.375
	FP PMSC RA (F) 11 - 1.2 Contact	Contact	4.375
	FP PMSC RA (F) 11 - 1.4 Sinking / Capsize	Sinking / Capsize	4.375
	FP PMSC RA (F) 12 - 1.2 Contact	Contact	4.375
	FP PMSC RA (T) 01 - 1.5 Fire / Explosion	Fire / Explosion	4.375
87	FP PMSC RA (T) 05 - 1.5 Fire / Explosion	Fire / Explosion	4.375
87	FP PMSC RA (T) 06 - 1.5 Fire / Explosion	Fire / Explosion	4.375
99	FP PMSC RA (F&T) 08 - 1.2 - Swamping / interaction / turbulence	Swamping / interaction / turbulence	4.25
99	FP PMSC RA (F) 03 - 1.1 Collision	Collision	4.25
99	FP PMSC RA (F) 07 - 1.2 Contact	Contact	4.25
99	FP PMSC RA (F) 08 - 1.2 Contact	Contact	4.25
99	FP PMSC RA (T) 05 - 1.3 Grounding	Grounding	4.25
	FP PMSC RA (F) 11 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	4.125
104	FP PMSC RA (F) 14 - 1.3 Grounding	Grounding	4.125
106	FP PMSC RA (F&T) 04 - 1.4 Fire/Explosion	Fire / Explosion	4
106	FP PMSC RA (F&T) 05 - 1.4 Fire/Explosion	Fire / Explosion	4
106	FP PMSC RA (F) 02 - 1.5 Fire / Explosion	Fire / Explosion	4
	FP PMSC RA (F) 13 - 1.6 Loss of Containment (oil product) Refer also to FP PMSC RA (F&T)	Loss of Containment (Oil Product)	4
	FP PMSC RA (F) 02 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3.875
110	FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3.875
110	FP PMSC RA (F) 15 - 1.4 Sinking / Capsize	Sinking / Capsize	3.875
	FP PMSC RA (F&T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&T) 1	Grounding	3.75
	FP PMSC RA (F&T) 05 - 1.3 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	3.75
	FP PMSC RA (F&T) 06 - 1.2 Capsize / Flooding	Capsizing / Flooding	3.75
	FP PMSC RA (F&T) 09 - 1.1 Contact	Contact	3.75
	FP PMSC RA (F) 11 - 1.1 Collision	Collsion	3.75
118	11 T MOO TO (17 TT TIO OF CONTAINING	Grounding	3.625
	FP PMSC RA (F&T) 01 - 1.3 Grounding	Grounding	3.5
	FP PMSC RA (F&T) 01 - 1.4 Sinking / Capsize	Sinking / Capsize	3.5
	FP PMSC RA (F&T) 04 - 1.3 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	3.5
	FP PMSC RA (F) 06 - 1.5 Fire / Explosion	Fire / Explosion	3.5
	FP PMSC RA (F) 15 - 1.6 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	3.5
	FP PMSC RA (F&T) 06 - 1.4 Hull Damage	Hull Damage	3.375
	FP PMSC RA (F) 12 - 1.3 Grounding	Grounding Collision	3.375
	FP PMSC RA (T) 01 - 1.1 Collision FP PMSC RA (F&T) 07 - 1.2 - Collision / contact		3.375
		Collision / Contact Grounding	3.25
	FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&T)7 FP PMSC RA (F) 09 - 1.3 Grounding	Grounding	3.25
	FP PMSC RA (F) 09 - 1.3 Grounding FP PMSC RA (F) 10 - 1.4 Sinking / Capsize	Sinking / Capsize	3.25
	FP PMSC RA (F) 10 - 1.4 Sinking / Capsize FP PMSC RA (F) 10 - 1.7 Loss of Dock Level	Loss of Dock Level	3.25
	FP PMSC RA (F) 10 - 1.7 Loss of Dock Level FP PMSC RA (F) 15 - 1.5 Fire / Explosion	Fire	3.25
	FP PMSC RA (F) 15 - 1.5 FIRE / EXPLOSION FP PMSC RA (T) 01 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3.25 3.25
127		Loss of Containment (Oil Product)	3.25
	FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (T) 06 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3.25
136		Loss of Containment / Power / Communication	
	FP PMSC RA (F&T) 09 - 1.4 Loss of Containment / Power / Communication		3.125
	FP PMSC RA (F) 03 - 1.5 Fire / Explosion	Fire / Explosion	3.125
	FP PMSC RA (F) 04 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.5 Fire / Explosion	Fire / Explosion Fire / Explosion	3.125
	FP PMSC RA (F) 03 - 1.5 File / Explosion FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3.125
	FP PMSC RA (F&T) 02 - 1.2 Capsizing / Flooding (Non Conventional Tugs)	Capsizing / Flooding	3
141	FP PMSC RA (T) 06 - 1.3 Grounding	Grounding	3
143	FP PMSC RA (F&T) 09 - 1.3 Fire / Explosion	Fire / Explosion	2.75

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

PMSC RISK ASSESSMENT - RISK RANKING

West				Most Likely Risk scored at Residual level			Worst Credible Risk scored at Residual					
2 PRESS 0.000 1.000	Rank	w	Vhat can go wrong	People	Property	Invironment	Business	People	Property	Environment	Business	
10 PROPER A.A. P. A. 11				5	5	5	5	8	10		10	7.25
Fig. 50.000.0000.0000.00000.00000.00000.00000.0000				2	6	4	4	5	5	5	5	4.75
P F F F F F F F F F F F F F F F F F F				2	2	2	2	5	5	5	5	3.5
P PROFICE NATION 1 Contemps Profit of Nation 1 Contemps 1 Co				6	6	3	3	5	5	5	5	
Proc. Proc				3	3	3	3	10	10	10	10	5.75
Fig. 10 Fig.				1	1	1	1	5	5	5	5	3
MP PROBLEMATER 10.1 + 10 columns 1.1	49			6	6	3	9	5	5	5	5	0.0
10 PT-9805 BATER 13 Company	58			5 3	10	5 3	10 9	10 5	10 5	10 5	10	
Victor Proc. Pro		FP PMSC RA (F&T) 02 - 1.5 Grounding G		3	3	3	6	10	10	10	10	
Fig. Page Dec. Page Dec. Page Dec. Page				3	3	3	3	3	5	5	5	3.75
10 PPRICE CAPER 1.4 - Projections 1.5 - Project 1.5 -				6	3	3	3	10 5	10	10	10	4.375
18 PR PRINCE RAPERT 10, 1.1.1 classes continuome can accident cases Control on other present credit of success Control on other present cases Control				3	3	3	3	3	4	4	5	3.5
10 PRINCE Set PRINCE 1 PRINCE SET				4	4	2	2	5	5	5	5	4 275
March Proceedings March American March American March American March American March American March				3	3	3	3	3	5	5	5	3.75
## PRINCE DATE OF A 1-14 In Terminate ## PRINCE DATE OF A 1-14 In TERM				4	4	2	2	5	5	5	5	4
10 1995 C. 1973 C. 1974 C.				2	2	4	2	5	5	5	5	3.75
SECTION Content Cont				1	2	1	3	5	5	5	5	
SEP PERSON CARPON 1.2 Security Invasional Content Co		FP PMSC RA (F&T) 07 - 1.1 - Swamping / turbulence / interaction St	Swamping / interaction / turbulence	9	3	3	6	10	4	2	10	
18 P. PASSE DE LETA TO 1-1 Sengance France Fr				3	2	1	2	5	5	3	5	3.25
121 Printing Carl Arth 100 -1.1 For Explosion Print				4	2	2		10	2	2	10	4.75
100 FOR STATE OF THE LOSS OF Communication 100 to 100 100 to 1		FP PMSC RA (F&T) 09 - 1.1 Contact C	Contact	3	3	3	3	3	5	5	5	3.75
Section Process (Comment of Product)				1	1	1	1	3	5	5	5	2.75
Section				2 5	2 5	2 	2 5	3	5 5	5 5	5	
## PPMSC RAPTOL 1.1 Strometics		FP PMSC RA (F&T) 11 - 1.1 Loss of Containment (Oil Product)		5	5	5	5	3	5	5	5	5
PP PRISC RATE 11 - 1.1 Grounding				6	6	6	2	10	10	10	10	
78 PPMSC RAFT 01 - 1.5 Refuge Capations				3	3	3	6	5	5	5	5	
March Physics RA (F) 3.1.1 all case of Contentioned (OI) Products) 4	78	FP PMSC RA (F) 01 - 1.4 Sinking / Capsize Si		3	5	4	4	5	5	5	5	4.5
1 PRISC RA (Fil 102 - 1.1 Collision	7 56		•	6	6	3	6	10	10	10	10	
Fig. PRISEC RACE 10.2 1.2 Comment			· · · · · · · · · · · · · · · · · · ·	6	9	8	8	3 5	5	5	5	
Section Part Section Contact Section Part Contact Section Part Contact Section Part Contact Section Sectio	4	FP PMSC RA (F) 02 - 1.2 Contact		5	10	5	5	10	10	10	10	8.125
190 PMSC Rd, Fri (20 - 14 Lises of Containment (of product)				3	6	3	9	8	8	10	10	
1995 PAMSC RAT 102 - 1 Loss of Dock Level (Lock Gate Operations) Loss of Dock Level (Lock Gate Operations)				3	3	5 3	5 3	5	5	5	5	4.75
PASS RAT 10 1.1 Colleges		FP PMSC RA (F) 02 - 1.6 Loss of Containment (oil product)	· · · · · · · · · · · · · · · · · · ·	4	4	4	4	2	3	5	5	3.875
6 PP MSC RAF (19.3 - 12 Context 6 PP MSC RAF (19.3 - 13 Context) 6 PP MSC RAF (19.3 - 13 Context) 6 PP MSC RAF (19.3 - 14 Stelland (Capazia) 8 Sharp (Capazia) 8 Sharp (Capazia) 8 Sharp (Capazia) 9 PMSC RAF (19.3 - 14 Stelland (Capazia) 9 PMSC RAF (19.3 - 14 Stelland (Capazia) 1 PMSC RAF (19.3 - 15 Ent Elementon) 1 S				3	3	3	9	3	5	4	5	4.375
6 P. PMSC RAT 10.3 - 1.4 Section / Capacite 5 P. PMSC RAT 10.3 - 1.5 PE (Personn)				3	6	6	3	5	5	5	5	4.25
130 P.P.MSC RALE (10.1 -1.5 colored)		FP PMSC RA (F) 03 - 1.3 Grounding G		2	6	4	6	5	5	5	5	4.75
4 P.P.MSC RALE (10.1.1 Content		TT T MOOTO TO	• 1	3	5	5	5	5	5	5	5	
32 P. PMSC RAL (F) 0.6.1.1.2 Contact				3	3	6	6	4	6	8	8	
Second S		FP PMSC RA (F) 04 - 1.1 Collision (Fishing/Leisure Vessel)		3	3	3	3	10	8	8	8	
Spring Passon RA (F) 04 - 1.4 Seniora / Capacize Spring Spring Capacize Spring				5	10	5	5	6	8	6	8	6.625
135 PP PMSC RA (Fin 04 - 1.6 Fine / Explosion Fine / Explosion Sin of S			-	3	9	6	3	10	6	8	10	6.875
Section Sect		FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fi		3	3	3	2	4	4	3	3	
FP PMSC RA (F) 05 - 1.2 Contact	49 29			3	3	6	6	4	6	8	8	5.5
18 FP PMSC RA (FI DS - 1.4 Sinking / Capsize	67	TT T WOO TO TO SUBJECT		3	6	3	3	10	10	10	10	4.875
135 FP PMSC RA (F) 05 - 1.6 Fire / Explosion		FP PMSC RA (F) 05 - 1.3 Grounding G	-	3	6	6	6	6	6	6	6	5.625
FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product)		The state of the s		3	9	6	3	10	6	8	10	
29 FP PMSC RA (F) 06-1.1 Collision (Fishing/Leisure Vessel) Collision 4				2	2	4	4	6	6	8	8	3.125
Franco F		FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel)		4	4	2	2	10	-		10	6.5
118 F P PMSC RA (F) 06 - 1.4 Sinking / Capsize		T T MOO TOTAL OF THE CONTROL		4	4	4	4	8	10	10	8	6.5
118 P. PMSC RA (F) 06 - 1.5 Fire / Explosion				3	9	6	3	10	6	8	10	6.875
Section Collision Collision Collision Collision Salar		FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fi		3	3	3	2	5	4	3	5	3.5
98 FP PMSC RA (F) 07 - 1.2 Contact 18 FP PMSC RA (F) 07 - 1.3 Grounding 19 FP MSC RA (F) 07 - 1.4 Sinking / Capsize 18 FP PMSC RA (F) 07 - 1.4 Sinking / Capsize 19 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 10 Fire / Explosion 11 FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product) 10 Loss of Containment (Oil Product) 11 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 12 FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product) 13 FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product) 14 FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations) 15 FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations) 16 FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations) 17 FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) 18 FP PMSC RA (F) 08 - 1.2 Contact 19 FP PMSC RA (F) 08 - 1.2 Contact 10 FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSC RA (F&TI)7 10 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 11 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 12 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 13 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 14 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 15 FP PMSC RA (F) 09 - 1.1 Collision 16 FP PMSC RA (F) 09 - 1.3 Grounding 17 FP PMSC RA (F) 09 - 1.3 Grounding 18 FP PMSC RA (F) 09 - 1.3 Grounding 19 FP PMSC RA (F) 09 - 1.3 Grounding 10 FP PMSC RA (F) 09 - 1.4 Sinking / Capsize 10 FP PMSC RA (F) 09 - 1.5 Sire / Explosion 10 Fire / Explosion 11 FP PMSC RA (F) 09 - 1.5 Grounding 12 FP PMSC RA (F) 09 - 1.5 Grounding 13 FP PMSC RA (F) 09 - 1.5 Grounding 14 FP PMSC RA (F) 09 - 1.5 Grounding 15 FP PMSC RA (F) 09 - 1.5 Fire / Explosion 16 FP PMSC RA (F) 09 - 1.5 Grounding 17 FP PMSC RA (F) 09 - 1.5 Grounding 18 FP PMSC RA (F) 09 - 1.5 Grounding 19 FP PMSC RA (F) 09 - 1.5 Grounding 10 FP PMSC RA (F) 09 - 1.5 Grounding 10 FP PMSC RA (F) 09 - 1.5 Grounding 11 FP PMSC RA (F) 09 - 1.5 Grounding 12 FP PMSC RA (F) 09 - 1.5 Grounding 13 FP PMSC RA (F) 10 - 1.5 Grounding 14 FP PMSC RA (F) 10 - 1.5 Gr				2	2	4	4	6	6	8	8	5
The PMSC RA (F) 07 - 1.4 Sinking / Capsize				3	6	3	3	5	4	10 5	10 5	
Fire Explosion		FP PMSC RA (F) 07 - 1.3 Grounding	-	3	6	6	6	10	10	6	8	6.875
135 FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product) 135 FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product) 136 FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product) 137 FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) 138 FP PMSC RA (F) 08 - 1.2 Contact 139 FP PMSC RA (F) 08 - 1.2 Contact 140 FP PMSC RA (F) 08 - 1.2 Contact 150 FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSC RA (F&T)/Z 150 FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSC RA (F&T)/Z 150 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 151 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 152 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 153 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 154 FP PMSC RA (F) 08 - 1.3 Grounding 155 FP PMSC RA (F) 08 - 1.3 Grounding 155 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 155 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 155 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 156 FP PMSC RA (F) 08 - 1.3 Grounding 157 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 158 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 159 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 157 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 157 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 159 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 157 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 158 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 159 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (J. J		4	6	4	6	5	4	3	4	4.5 6.975
35 FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations) Loss of Dock Level (Lock Gate Operations) 5 5 5 10 4 6 8 8 6.375 78 FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) Collision (Fishing/Leisure Vessel) 2 6 4 4 5 5 5 5 5 85 FP PMSC RA (F) 08 - 1.2 Contact Contact 3 6 8 8 6.375 10 12 13 14 15 15 15 15 15 15 15			•	3	3	3	2	4	4	3	3	
PPMSC RA (F) 08 - 1.2 Contact 3		FP PMSC RA (F) 07 - 1.7 Loss of Dock Level (Lock Gate Operations)		5	5	5	10	4	6	8	8	6.375
126 FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSC RA (F&T)7 Grounding 2				2	6	4	4	5	5	5	5	
49 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 3 6 6 3 10 4 8 8 5.5 18 FP PMSC RA (F) 08 - 1.5 Fire / Explosion Fire / Explosion 3 9 6 3 10 6 8 10 6.57 49 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 3 6 6 4 8 8 5.5 13 FP PMSC RA (F) 09 - 1.1 Collision Collision 5 5 5 5 5 10 10 8 10 7.5 126 FP PMSC RA (F) 09 - 1.2 Contact Contact 3 6 3 5 10 10 10 10 10 6.875 126 FP PMSC RA (F) 09 - 1.3 Grounding Grounding 2 4 2 2 1 5 5 5 3.25 127 FP PMSC RA (F) 09 - 1.4 Sinking / Capsize Sinking / Capsize 3 6 4 3 5 5 5 5 3.25 128 FP PMSC RA (F) 09 - 1.5 Fire / Explosion Fire / Explosion 3 9 6 3 5 5 5 5 5.5 129 FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 9 6 3 5 5 5 5 5.325 20 FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 9 6 6 6 10 10 10 10 6.75 46 FP PMSC RA (F) 10 - 1.1 Collision Collision 3 6 3 3 5 5 5 5 5.325 47 FP PMSC RA (F) 10 - 1.2 Contact Contact 5 10 5 5 6 10 8 10 7.375 48 FP PMSC RA (F) 10 - 1.3 Grounding Grounding 3 9 3 3 2 10 10 10 10 6.75				- 3 2	4	2	- 3 2	4	4	4	4	
49 FP PMSC RA (F) 08 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 3 6 6 4 6 8 8 5.5 13 FP PMSC RA (F) 09 - 1.1 Collision Collision 5 5 5 5 10 10 8 10 7.25 18 FP PMSC RA (F) 09 - 1.2 Contact Contact 3 6 3 3 10 10 10 10 6.875 126 FP PMSC RA (F) 09 - 1.3 Grounding Grounding 2 4 2 2 1 5 5 5 .5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Si	Sinking / Capsize	3	6	6	3	_	4	4	8	5.5
13 FP PMSC RA (F) 09 - 1.1 Collision				3	9	6	3	10	6	8	10	
18 FP PMSC RA (F) 09 - 1.2 Contact 3 6 3 3 10 10 10 6.873 126 FP PMSC RA (F) 09 - 1.3 Grounding Grounding 2 4 2 2 1 5 5 5 3.25 78 FP PMSC RA (F) 09 - 1.4 Sinking / Capsize Sinking / Capsize 3 6 4 3 5 5 5 5 5 58 FP PMSC RA (F) 09 - 1.5 Fire / Explosion Fire / Explosion 3 9 6 3 5 5 5 5 5 2e FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 3 6 6 10 10 6.75 86 FP PMSC RA (F) 10 - 1.1 Collision Collision 3 6 3 3 5 5 5 5 3.37 31 FP PMSC RA (F) 10 - 1.2 Contact Contact 5 10 5 5 6 10 10 10 6.75 36 FP PMSC RA (F) 10 - 1.3 Grounding Grounding 3 9 3 3 2 10 10 6.75			· · · · · · · · · · · · · · · · · · ·	3 5	3 5	6 5	- 6 5	10	10	8	10	
78 FP PMSC RA (F) 09 - 1.4 Sinking / Capsize 3 6 4 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	18	FP PMSC RA (F) 09 - 1.2 Contact C	Contact	3	6	3	3	-		10		
58 FP PMSC RA (F) 09 - 1.5 Fire / Explosion Fire / Explosion 3 9 6 3 5 5 5 5.222 26 FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 3 6 6 6 10 10 10 5.75 86 FP PMSC RA (F) 10 - 1.1 Collision 3 6 3 3 5 5 5 5 4.375 11 FP PMSC RA (F) 10 - 1.2 Contact Collision 3 6 3 3 5 5 5 5 4.375 36 FP PMSC RA (F) 10 - 1.2 Contact Contact 5 10 5 5 6 10 8 10 7.375 36 FP PMSC RA (F) 10 - 1.3 Grounding Grounding 3 9 3 3 2 10 10 10 6.25				2	4	2	2	1	5	5	5	3.25
26 FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 3 3 6 6 10 10 6.73 86 FP PMSC RA (F) 10 - 1.1 Collision Collision 3 6 3 3 5 5 5 5 4.375 11 FP PMSC RA (F) 10 - 1.2 Contact Contact 5 10 5 5 6 10 8 10 7.375 36 FP PMSC RA (F) 10 - 1.3 Grounding Grounding 3 9 3 3 2 10 10 6.25				3	- 6 9	4 6	3	5 5	5 5	5 5	5 5	4.5 5.125
11 FP PMSC RA (F) 10 - 1.2 Contact 5 10 5 5 6 10 8 10 7.375 36 FP PMSC RA (F) 10 - 1.3 Grounding Grounding 3 9 3 3 2 10 10 10 6.25		FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product)	oss of Containment (Oil Product)	3	3	6	6	6	10	10	10	
36 FP PMSC RA (F) 10 - 1.3 Grounding Grounding Grounding 3 9 3 3 2 10 10 10 6.25				3	6	3	3	5	5	5	5	
				5 3	10 9	5 3	5	6 2		10	10	
	126			1	2	2	1	5	5	5	5	3.25

PMSC RATE 0.1 - 15 cent of Containment (of Product)	7	FP PMSC RA (F) 10 - 1.5 Fire / Explosion	Fire / Explosion	2	0	-	2	10	10	10	10	7.625
229 PMSC RAF 10 - 17 Less of Oosk Level				3	9	6	- 3	10	10	10	10	
13 2 P PASC RAT 11 1 1 College 2 P PASC RAT 11 1 1 College 3 2 P PASC RAT 11 1 1 College 4 3 3 3 3 3 3 3 3 3				3	3	- 4	6	2	5	- 4	- 4	
Section Pensic Ref First 2 Context	-			2	- 1	- 1						
11 PP MSC RAFF 11-1-13 Grounding				2	6	- 2	2	- 5	5	5	5	
58 PP-MSC RA (F) 11-1 & Swing (Capatre Sinking (Capatre Sinkin	-			2	4	2	2	4		-	-	
PPMSC RAF[F11:1 5 frex Explosion			9	1	-	4			,			
190 P.P.MSC RALF[12-13] Coloration 190 P.P.MSC RALF[12-13] Coloration 190 P.P.MSC RALF[12-14] Coloration 190 P.P.MSC RALF[12-14] Coloration 190 P.P.MSC RALF[12-15] Coloration 190 P.P.MSC RA	7		ů i	2	9	-	,	10	10	10	10	
PP MSC RA (F) 12-1.1 Collision	103			3	3	6	6	2	3	5	5	
Sep PMSC RA (F) 12 - 1.3 Counted			Collision	4	4	4	4	5	5	5	5	
13 13 13 13 13 13 13 14 13 13	86		Contact	3	6	3	3	5	5	5	5	
Sep PMSC RA (F) 12 - 1.4 Seption (Capatize)	123		Groundina	1	3	1	4	3	5	5	5	
44 EP PINSC RA (F) 12 - 1.5 Fire / Explosion Fi	68			3	5	-	5	5	5	5	5	
25 P. PMSC RA (F) 12-1.6 Loss of Containment (oil Product) Loss of Containment (oil Product) 3 1 0 0 3 3 0 0.5				3	9	6	9	5	5	5	5	
46 PP PMSC RA (F) 13-1.1 Sinking / Capsize 7 PF PMSC RA (F) 13-1.1 Sinking / Capsize 8 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 13-1.1 Sinking / Capsize 9 PP PMSC RA (F) 14-1.1 Collision 9 PMSC RA (F) 14-1.1 Collision 9 PP PMSC RA (F) 14-1.1 Collision 9 PMSC RA (F) 14-1.1 Collis				3	3	6	6	6	10	10	10	
78 FP PMSC RA (F) 13 - 1.3 Grounding			,	5	10	5	5	5	5	5	5	
68 FP PMSC RA (F) 13-1.4 Sinking / Capaize				6	-10	2	2	5	5	5	5	
FP PMSC RA (F) 13 - 1.5 Fire / Explosion	-		Ü	- 0	- 6	- 2		- 5	- 5	- 5	- 5	
105 FP PMSC RA (F) 13 - 1.6 Loss of Containment (oil product) Refer also to FP PMSC RA (F81)5 Loss of Containment (Oil Product) 1				10	10	- 5	5	- 5	5	5	5	
46 FP PMSC RA (F) 14 - 1.1 Collision Collis	-			10	10	6	2	2		- 5	- 5	0.23
11 FP PMSC RA (F) 14-1.2 Contact			, , ,	10	10	- 6	- 3 - E	10	10	0	10	6 125
103 FP PMSC RA (F) 14-1.3 Grounding		TT T MOC TOTAL TITLE COMMON		10	10		-		10	0	10	
2 FP PMSC RA (F) 14-1.4 Sinking / Capsize Sinking				5	- 5	- 5	5	10	10	8	10	
Fire Explosion	2		9	3	3	3	3	- 4	-	3		
4	6		0 1	3	4	3	3	5	- 5	3	- 3	
FP PMSC RA (F) 15 - 1,1 Collision				Z	4		4	2	4	3	4	
13 FP PMSC RA (F) 15 - 1.2 Contact		T T WOO TO CLITTE TO EGGG OF CONTAINMENT (ON PROGRES)	, ,	10	10	- 4	-	10	10	4 0	10	
Grounding Grou				10	10	5	5			8		
109 FP PMSC RA (F) 15 - 1.4 Sinking / Capsize				- 5		-	-	10	- 10	0	10	7.23
Fire Explosion Fire Expl				2	- 4	2	,	4	0	9	0	2 975
118 FP PMSC RA (F) 15 - 1.6 Loss of Containment (Oil Product) Loss of Containment (Oil Product) 4				2	- 4	2	3	-	- 4	2	- 4	
123 EP PMSC RA (T) 01 - 1.1 Collision Colli					4	1	4	2	9	. a	4	
46 FP PMSC RA (T) 01 - 1.2 Contact 5 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5						- 1	-					
78 FP PMSC RA (T) 01 - 1.3 Grounding Grounding Grounding 2 6 2 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				- 2	10	- 1	-	-	- 5	- 5	- 3	
29 FP PMSC RA (T) 01 - 1.4 Sinking / Capsize Sinki				2	10	- 5	5	- 5	5	5	5	
8 FP PMSC RA (T) 01 - 1.5 Fire / Explosion Fire / Explosion 3 6 3 3 5 5 5 5 4.375 126 FP PMSC RA (T) 01 - 1.5 Fire / Explosion Collision				2	0	0		-	- 5	- 5	- 3	
126 EP PMSC RA (T) 01 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 2 2 2 2 3 5 5 3.25 78 EP PMSC RA (T) 05 - 1.1 Collision Collision 4 4 4 4 5			0 1	2	0	2	2	5	- 5	- 5	- 5	0.0
78 FP PMSC RA (T) 05 - 1.1 Collision Collis				3	3	- 3	3	- 3	- 5	- 5	- 3	
29 FP PMSC RA (T) 05 - 1.2 Contact 2 6 8 10 8 10 8 10 6.5	-		, ,		- 2			- 3	- 5	- 5	5	
Section Sect				- 4	- 4	- 4	- 4	9	10	0	10	
60 FP PMSC RA (T) 05 - 1.4 Sinking / Capsize Sin				2	9		6	- 8	10	- 8	10	
86 FP PMSC RA (T) 05 - 1.5 Fire / Explosion Fire / Explosion 3 6 3 3 5 5 5 5 4.375 126 FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 2 2 2 2 3 3 5 5 5 3.25 36 FP PMSC RA (T) 06 - 1.1 Collision 2 4 2 1 10 10 10 6.25 3 FP PMSC RA (T) 06 - 1.2 Contact Contact 5 10 5 5 10 10 8 10 7.875 140 FP PMSC RA (T) 06 - 1.3 Grounding Grounding 2 2 2 2 2 4 4 4 4 3 3 60 FP PMSC RA (T) 06 - 1.4 Sinking / Capsize Sinking / Capsize 4 8 6 6 4 4 4 4 4 3 86 FP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 3 6 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				- 2		- 4	- 6	5	5	5	5	4.25
126 FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 2 2 2 2 3 5 5 3.25 36 FP PMSC RA (T) 06 - 1.1 Collision Collision 2 4 2 2 10 10 10 6.25 5 FP PMSC RA (T) 06 - 1.2 Contact Contact 5 10 5 5 10 10 8 10 7.875 140 FP PMSC RA (T) 06 - 1.3 Grounding Grounding 2 2 2 2 2 2 2 2 2 4 4 4 3 60 FP PMSC RA (T) 06 - 1.4 Sinking / Capsize Sinking / Capsize 4 8 6 6 4 4 4 4 86 FP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 3 6 3 3 5 5 5 5 5				- 5	-	- 5	- 5	5	- 5	- 5	- 5	4.275
36 FP PMSC RA (T) 06 - 1.1 Collision 2 4 2 2 10 10 10 6.25				3	6	3	3	- 5	5	- 5	5	
5 FP PMSC RA (T) 06 - 1.2 Contact				2		2	2	10	10	10	10	
140 EP PMSC RA (T) 06 - 1.3 Grounding Grounding 2 2 2 2 4 4 4 3 60 EP PMSC RA (T) 06 - 1.4 Sinking / Capsize Sinking / Capsize 4 8 6 6 4 4 4 5 86 EP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 3 5 5 5 5 3 3 5 5 5 5 3	5				40					10	10	
60 FP PMSC RA (T) 06 - 1.4 Sinking / Capsize Sinking / Capsize 4 8 6 6 4 4 4 4 5 5 86 FP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 3 6 3 3 5 5 5 5 4.375	140			5	10	5	5	10	10	8	10	/.875
86 FP PMSC RA(T) 06 - 1.5 Fire / Explosion					2			- 4	4	4	4	3
				4	8	6	6	4	4	4	4	4.275
				3	2	3	2	3	5	5	5	

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

Rank	Risk Assessment No.	Risk Assessment Name	Average Score						
1	FP PMSC RA (F)14	Forth - River Transit and Berthings/Sailings small commerical craft (tugs, workboats etc.)	6.56						
2	FP PMSC RA (F&T)2	Forth & Tay - Towage Operations	5.958333333						
3	FP PMSC RA (F)9	Braefoot Jetty - Arrival/Sailing Eastern Limits to Berth	5.63						
4 <u>FP PMSC RA (F)1</u>		Forth River Passage - Standard Vessel	5.60						
5	FP PMSC RA (F)6	Port of Kirkcaldy - Arrival/Sailing Close Approaches of Dock to Berth	5.56						
6	FP PMSC RA (F)4	Port of Methil - Arrival/Sailing Methil Pilot Station to Berth	5.52						
7	FP PMSC RA (F)7	Port of Burntisland - Arrival/Sailing Close Approaches of Dock to Berth	5.46						
8	FP PMSC RA (F)2	Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth with Outer Berth works	5.45						
9	FP PMSC RA (F)5	Methil Energy Park - Arrival/Sailing Methil Pilot Station to Berth	5.33						
10	FP PMSC RA (F&T)3	Forth & Tay - Immobilised Vessels	5.29						
11	FP PMSC RA (F)15	Cruise Vessel Tender Operations (Hound Point / Newhaven)	5.23						
12	FP PMSC RA (F)10								
13	FP PMSC RA (F)13	FP PMSC RA (F)13 Cruise Vessels at Anchorage							
14	FP PMSC RA (F&T)11	Forth & Tay - Marine Pollution (Enclosed Dock)	5.00						
15	FP PMSC RA (F)8	Inverkeithing - Arrival/Sailing Saint Davids Beacon to Berth	4.98						
16	FP PMSC RA (T)6	Tay - River Transit and Berthings/Sailings small comerical craft (tugs, workboats etc.)	4.96						
17	FP PMSC RA (F)12	Hound Point - Arrival/Sailing Eastern Limits to Berth	4.94						
18	FP PMSC RA (F&T)1	Forth & Tay - Vessel at Anchor	4.916666667						
19	FP PMSC RA (F&T)10	Forth & Tay - Marine Pollution (Tidal Waters)	4.75						
20	FP PMSC RA (F)11	Crombie Berthing/Sailing	4.65						
20	FP PMSC RA (T)5	Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth	4.65						
22	FP PMSC RA (T)1	Tay River Passage - Standard Vessels (Arrival/Sailing Port Approaches to Berth)	4.60						
23	FP PMSC RA (F&T)7	Forth & Tay - Diving Operations	4.56						
24	FP PMSC RA (F)3	Port of Rosyth - Arrival/Sailing No.1 Rosyth Channel Buoy to Berth	4.52						
25	FP PMSC RA (F&T)8	Forth & Tay - Recreational Events	4.50						
26	FP PMSC RA (F&T)6	Forth & Tay - NAABSA Berths	4.21						
27	FP PMSC RA (F&T)5	Forth & Tay - Bunkering Operations in Tidal Waters	4.04						
28	FP PMSC RA (F&T)4	Forth & Tay - Bunkering Operations in Dock	3.96						
29	FP PMSC RA (F&T)9	Forth & Tay - Underwater Cables & Pipelines	3.21						



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)	Risl	Risk scored at Residual level (Most Likely) Overall Risk					Risk scored at Residual level (Worst Credible) Overall Risk					
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business		
1.1															
1.2															
1.3															
1.4															
1.5															
			Risk Ranking												

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

ENVIRONMENT:

- 1 = Negligible, No Action required 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

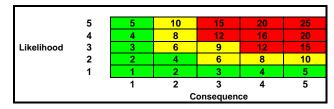
PROPERTY:

- 1 = negligible < £5000
- 2 = Minor > £5000
- 3 = Moderate >£50,000
- 4 = Serious, > £500,000
- 5 = major, > £2,000,000

BUSINESS:

- 1 = Negligible impact < £5000
- 2 = Minor impact > £5000
- 3 = Moderate impact > £50,000, bad local publicity, short term reduction of activity.
- 4 = Serious Impact, >£500,000, bad widespread publicity, temporary Port Facility shutdown.

OVERALL RISK



RED The Higher numbers(Greater than 10) in the matrix are considered "High-risk", These activities should not be carried out without additional controls being put in place to reduce the

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.

DEF

CAUSES
System Failure
Human Error / Failure
Environmental Conditions
CONTROLS
Aids to Navigation

Legislation & Guidance
Conservancy
Emergency Plans

INITIONS

DEFINITION

A breakdown of any system hardware or operating system. Examples of a system failure include but is not limited to:

- Any technical failure on board a vessel / craft
- Technical failure with the VTS monitoring system
- AtoN failure
- Error with survey data
- Failure with conservancy maintenance & verification process
- Techinical failure with the lock gates
- Techinical failure resulting in loss of dock level

Human failure examples can be:

- Failure of FTNS to follow and execute proper processes and procedures.
- Bridge team Error
- Human error due to lack of care or attention
- Human error due to violation of law, procedure or guidance

Environmental Condition exmples can include, but are not limited to:

- High winds
- Rough Seas
- Restricted visibility
- Strong current / tide
- Siltation

An Aid to Navigation is a device, system or service, external to vessels, designed and operated to enhance safe and efficient navigation of individual vessels and/or traffic.

These can include but are not limited to:

- Buovs
- Lights
- Lighthouses
- Sound signals
- Portable Pilot Unit (PPU)
- AIS
- ECDIS
- RADAR
- GPS
- Port Entry Lights

Legislation and guidance refers to all applicable legislation and guidance related to the navigational safety of vessels, examples of these can include but is not limited to:

- Forth Ports Bye Laws
- General Directions
- Marine Procedures Guidelines and Information
- Towage Guidelines
- All other relevant international and national legislation
- Notice to Mariners
- Surveying and survey programming
- Promulgation of survey data
- Dredging and dredging programme
- Aids to Navigation maintenance and verification
- Forth Ports contingency plans
- Local Authority contingency plans
- National contingency plans



PUKITIPUKIS LIMITED Navigational Risk Assessment

MRFS - 01-2023 (Partial propulsion failure) 03-2023 (M/E failure) 30-2024 (M/E failure) 33-2024 (M/E failure)

		F	orth River Passage - Standard Vessel	sel										
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 level (Most Likely) (Worst Credible) Overall Risk Overall Risk		level					ole)	Risk Score	MRFs: 54/21 (Close quarters situation), 66/21 (Mechanical Failure), 05/22 (Mechanical Failure), 11/22 (Mechanical Failure) 32/22 (Mechanical Failure) 01/23 (Mechanical Failure), 05/23 (Mechanical failure), 22/23 (Mechanical Failure), 25/23 (Mechanical Failure)	
				Likelihood	T	Property	<u></u>		Likelihood	T,	ŧ	s	Hazard Ris	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	2	6	6	6	2	2 1	10 10) 10	10	7.5	Most likely: Collision between 2 commercial vessels around the bridges area resulting in minimal damage.
1.2	Contact	System Failure Human Error Environmental Conditions	Pilotage FTNS (including additional power failure safety check) Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Additional 8 knot Speed limit in vicinity of Bridges	3	3	6	3	3	1	5 5	5	5	4.375	Worst credible: Collision between VLCC and cruise vessel resulting in total loss of vessels and loss of life. Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Large impact allision with bridge resulting in extreme damage to vessel and bridge, and loss of life.
1.6	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Aids to Navigation Conservancy Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Legislation & Guidance	3	3	3	3	6	1	5 5	5 5	5	4.375	Most likely: Vessel touches the bottom and continues on voyage with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans Weather Forecasting / Tidal Predictions Notice to Mariners	1	3	5	4	4	1	5 5	5 5	5	4.5	Most likely: Commercial Vessel sinks outwith main shipping areas, all crew safely abandon ship
1.6	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans	3	6	6	3	6	2 1	10 10) 10	10	7.625	Worst credible: Cruise vessel sinks resulting in total loss of vessel and loss of life. Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans Weather Forecasting / Tidal predictions Conservancy Vetting (Tankers)	4	4	4	8	8	1	3 5	5	5	5.25	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content	Reviewed	Changes Made								
MRFs and POL	REPs reviewed.									
Overall vessel numbers calling a	t Forth, also vessel type and size.									
		Reviewed Post Baltimore Bridge incident additional controls added for contact Hazard.								
FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 1/9	Created by By / Date CHM, MM, HMFO, HMFI, HMDD, Man Tow&PV / Oct 2012								
Risk Assessment - Forth River	Review Due	Revised By / Date								
Passage (Standard Vessel)	Aug-25	MMT July 24								



	Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth														MRFs: 67/21 (Contact), 71/22 (mechanical failure) 01/22 (contact), 12/22 (loses Gangway)14/22 (disloged coping stone) 26/22 (contact) 29/22 (communication failure), 33/22 (Contact), 51/22 (mechanical failure), 53/22 (contact), 20/32 (Contact), 37/23 (Contact), 35/23 (mechanical failures) 36/23
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	F	(Mo	red at level ost Lik Overa	cely)			Worst	evel	ible)		Risk Score	(Mechanical Failure) 040/23 (Debris in Stbd Unit), 044/23 (construction works crane slewed over channel), 062/23 - (Dislodged Fender), 003/24-(Generator Failure), 006/24 (Objected sucked into Jet), 014/24 (Dangerous Practise by ships crew), 016/24 (Fall from height), 019/24 - (Lock Gate closure comprimised by Fender), 021/24 (Damage to sustained by vessel), 027/24 (Thrusters shutdown)
				Likelihood	People	Property	Environment	Business	Pikelihood	People	Property	E VII OILLI		Hazard F	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aldis to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Additional Pilot for FTC >170m	3	6	9	6	6	1	5	5 5	5 5	5 !	5.875	Most Likely: Collision with small vessel resulting in no damage. Worst Credible: Collision involving cargo vessel and cruise ship. Resulting in the loss of vessel and loss of life.
12	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Towage Weather Forecasting / Tidal Predictions Emergency Plans Aids to Navigation Conservancy Fendering Quay edge 'cargo clear' demarkation Cranes properly stowed on quayside Swing Bridge Procedure Forth Ports H&B Procedures Aids to Navigation Additional Pilot for FTC >170m	5	5	10	5	5	2	10	10 1	0 1	0 8	3.125	Most Likely: Slow speed impact with quay resulting in minimal damage to vessel or damage to Quay Worst Credible: Large impact resulting in extreme damage to vessel and infrastructure. Quayside no
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Towage Weather Forecasting / Tidal Predictions Emergency Plans Additional towage Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations)	3	3	6	3	Ø	2	8	8 1	0 1	0 :	7.125	Ionger able to operate and vessel requiring repair possible death / loss of containment. Most Likely: Vessel grounded in soft mud and floats on following tide without damage. Worst Credible: Vessel hard aground, cannot be refloated at the Port enterance. Port is closed indefinally and major damage to vessel with loss of containment.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	4	4	5	5	1	5	5 5	5 .5	5	4.75	Most Likely: Vessel sinks in approach to port, total loss of ship, and crew abandon ship.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	3	3	3	3	3	1	5	5 5	5 5	5	4	Worst Credible: Vessel sinks in approach to port, total loss of ship and crew. Most Likely: Small fire on-board quickly extinguished.
1.6	oss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	4	4	4	4	4	1	2	3 5	5 5	5 :	3.875	Worst Credible: Uncontrollable fire, total loss of vessel, crew and cargo. Most Likely: Small spill of non-persistent product. Worst Credible: Large scale spill outside of the locks which cannot be contained resulting in port closure and extensive environmental impact.
	Loss of Dock Level (Lock Gate Operations)	System 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 Water of Leith Guages (controlled by City of Edinburgh council)	3	3	3	3	9	1	3	5 4	. 5	5 4	1.375	Most Likely: Loss of dock level which does not result in significant loss of dock level. Possible impact to low under keel clearance movements Worst Credible: Large loss of dock level. Causing low underkeel clearance vessel take the bottom of dock. Possible large scale damage to vessels and infrastructure.

Content Reviewed	Changes Made
MRFs and POLREPs reviewed.	
Overall vessel numbers calling at Forth, also vessel type and size.	
Number , nature, and size of ongoing projects.	
	Additional Outer Berth controls removed, Risk Scoring updated
	3.4

FORTH PORTS LIMITED		Risk Assessment Team / Date MM, HMFO / 3rd Dec2012
Risk Assessment - Port of Leith	Review Due	Revised By / Date
	May-25	MMT -Leith , Aug-24



	Port of Rosyth - Arrival / Sailing No1 Rosyth Channel Buoy to Berth													
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		red at level st Like		dual			vel	esidual	Score	
	(Event leading to a consequence)		(What action & how frequent)	,		Overal			- I	Ove	_	Risk	Risk	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Province and an arrangement of the province and arrangement of the province arrangement of the pro	Business	Hazard	MRFs: 21/22 (Mechanical Failure), 30/22 (communication failure), 43/22 (mechanical failure) 67/22 (failure to report defect)
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	2	4	6	2	2	1	5 5	5 5	5 5	4.25	Most likely: Collision between 2 vessels at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two cruise vessels resulting in loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Quay edge 'cargo clear' demarkation Cranes properly stowed on quayside Aids to Navigation	3	3	6	6	3	1	5 5	5 .	5 5	4.75	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Large cruise vessel contacts quayside at high speed resulting in significant damage to vessel, quayside, and serious injuries / loss of life.
1.3 (Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling	2	2	6	4	6	1	5 5	5 5	5 5	4.75	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4 \$	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	1	3	5	5	5	1	5 5	5 (5 5	4.75	Most likely: Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks resulting in total loss of vessel, and loss of life.
1.5 F	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans	1	3	3	3	2	1	4 4	1 3	3 3	3.12	Most likely: Small fire on board which is quickly and easily extinguished.
1.6	oss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	3	3	3	6	6	2	4 6	5 8	3 8	5.5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRFs reviewed - contact.	
Vessel numbers, size, and type in the area.	
Ongoing projects that have an impact.	
	Risk Scoring updated / Collision - Most likely scenario updated

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F) 03/06	MM, HMFO / 9th Jan 2013
Risk Assessment - Port of Rosyth	Review Due	Revised By / Date
	Aug-25	MMT, Aug 2023



	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)	Ris		leve lost Li	el ikely)	· · · · · · · · · · · · · · · · · · ·		Score	MRF 08/22 (Contact), 61/22 (Contact), 08/23 (Mechanical Failure)				
	(Event leading to a consequence)		(what action a now nequent)	Likelihood	People	Overty Loberty	۱ŧ	Business	Likelihood	Н	Property	Environment	Business	Hazard Risk	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	3	3	3	2	10	8	8	8	5.75	Most likely: Vessel collides with small craft resulting in no damage to the larger vessel and no/minor to damage to the smaller vessel. Results in no injuries to persons Worst credible: Vessel collides heavily with small craft resulting in extensive damage to both vessels and multiple injuries/fatalities
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Fendering Cranes properly stowed on quayside Dock Gatemen Procedures	5	5	10	5	5	2	6	8	6	8	6.625	Most likely: Vessel makes light contact with object/quay resulting in no/minor damage to the vessel and quay Worst credible: Vessel makes heavy contact with object/quay resulting in extensive
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Dock gate procedure	2	2	4	4	2	2	6	8	8	8	5.25	damage to both vessel and quay and possible injuries Most likely: Vessel runs aground with no damage to vessel, no pollution and can be refloated with the tide Worst credible: Vessel runs aground causing extensive damage to the vessel, major pollution and blocking entrance to ports
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Dock gate procedure	3	3	9	6	3	2	10	6	8	10	6.875	Most likely: Small Vessel sinks/capsizes within harbour with everyone safely evactuated and no loss of life Worst credible: Vessel sinks/capsizes in entrance of harbour with multiple fatalities and total loss of vessel
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans	1	3	3	3	2	1	4	4	3	3	3.125	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	3	6	6	2	4	6	8	8	5.5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRF and POLREPS review	
Number of vessels calling, other traffic in the vicinity, and vessel type	
calling.	
	Risk Scoring updated, Grounding - Most Likely scenario updated

FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 4/05	Risk Assessment Team / Date HMFO, HMDD, MM / 16th Jan 2013
Risk Assessment - Port of Methil	Review Due	Revised By / Date
	Aug-25	MMT . August 2023



	Methil Energy Park - Arrival/Sailing Methil Pilot Station to Berth												No relevant MRFs since previous review		
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris	k sco	red a leve	el			k scor	level			core	
	(Event leading to a consequence)	How carrit go wrong	(What action & how frequent)	Г	_	Over			Г	1		II Risk		Risk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard R	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy External standby tugs audited and issued with restricted towage licence for emergencies.	2	4	4	2	2	2	10	10	10	10	6.5	Most likely: Collision between small craft and larger vessel at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two commercial vessels resulting in loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside / Seabed Obstruction	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Methil Energy Park Procedures External standby tugs audited and issued with restricted towage licence for emergencies. Fendering	3	3	6	3	3	2	6	6	6	6	4.875	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage Worst credible: Large vessel contacts quayside at high speed resulting in significant damage to vessel, quayside, and serious injuries / loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Survey / dredging Programme / Schedule (By Operator) Methil Energy park Procedures	3	3	6	6	6	2	6	6	6	6	5.625	Most likely: Vessel toches the bottom when manouvring with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in disruption to
	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering SE Quayside Regulations & Risk Assessment External standby tugs audited and issued with restricted towage licence for emergencies.	3	3	9	6	3	2	10	6	8	10	6.875	ports, extreme damage and loss of contaminent. Most likely: Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks in harbour approach resulting in total loss of vessel and loss of life.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	3	3	3	2	1	4	4	3	3	3.125	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Survey Programme / Schedule (By Operator)	2	2	2	4	4	2	6	6	8	8	5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRFs and POLREPs reviewed.	
Overall vessel numbers calling at Forth, also vessel type and size. Number , nature, and size of ongoing projects.	
	Likelyhood and Risk Scoring updated, Grounding - Most Likely scenario updated

FORTH			Risk Assessment Team / Date HMFO, HMDD, MM / 23rd Jan 2013						
	Risk Assessment - Methil	Review Due	Revised By / Date						
		Aug-25	MMT, August 2023						



	Port of Kirkcaldy - Arrival / Sailing Close Approaches of Dock to Berth												MRF: 17/23 (contact)		
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Mo	leve ost L				(Wor	leve st Cr	at Res el edible	e)	2	
				Likelihood	People	Ī,	٦	Т	Likelihood		Property	Environment	Business	200	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	4	4	2	2	2	10	10	10	10	6	Most likely: Collision between Kirkcaldy vessel and small recreational / commercial vessel resulting in minimal damage Worst credible: Collision between outbound Kirkcaldy vessel and other vessel in anchorage resulting in extreme damage and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Cranes properly stowed on quayside	4	4	4	4	4	2	8	10	10	8	6	
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations)	2	2	4	2	2	2	6	8	8	8	ę	
	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	9	6	3	2	10	6	8	10	6.8	
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans	1	3	3	3	2	1	5	4	3	5	3	Most likely: Small fire on board which is quickly and easily extinguished.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	2	2	4	4	2	6	6	8	8		

Content Reviewed	Changes Made
MRFs updated, Vessel call numbers reviewed	Collision - Most likely scenario updated, Risk Scoring updated,

FORTH PORTS LIMITED

Document ID
FP PMSC RA (F) 6/06

Risk Assessment Team / Date
HMFO, HMDD, MM / 23rd Jan 2013

Review Due
Aug-25

Revised By / Date
MMT, August 2023



		Port of Burntisl	and - Arrival / Sailing Close Approaches of	Doc	ck to	Be	rth								MRFs: 28/22 (Black out)
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Mos	ed at level st Like	ely)			(Wors	level	dible))	sk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard Risk	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	3		3	2	8	10		10	6.25	Most likely: Collision at slow speed between large vessel and small commercial, leisure, or fishing vessel resulting in minimal damage Worst credible: High impact collision between two vessels and resulting in extreme damage and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Dock Gatemen Procedures	3	3	6	3	3	1	5	4	5	5	4.25	Most likely: Vessel has slow speed impact with quayside whilst berthing resulting in minima damage. Worst credible: High impact with quayside whilst berthing resulting in extreme damage to vessel and quayside, and loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Dock Gate Procedure	3	3	6	6	6	2	10	10	6	8	6.875	Most likely: Vessel touches the bottom with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to
	Sinking / Capsize Fire / Explosion	System Failure Human Error Environmental Conditions System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Dock Gate Procedure Pilotage FTNS Legislation & Guidance	2	4	6	4	6	1		4		4	4.5	ports, extreme damage and loss of contaminent. Most likely: Vessel sinks, all crew safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Emergency Plans Pilotage FTNS	3	3	9	6	3	2	10	6	8	10	6.875	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
		Environmental Conditions	Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	3	3	3	2	1	4	4	3	3	3.125	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
1.7	Loss of Dock Level (Lock Gate Operations)	System Failure Human Error Environmental Conditions	Port Planned Maintenance system Training / Auditing of Port Staff Dockgate Procedure	5	5	5	5	10	2	4	6	8	8	6.375	Most likely: Fault with gates which is repaired before major loss of dock level. Worst credible: Fault with gates which cannot be repaired before major loss of dock level resulting in vessels aground with extreme damage.

Content Reviewed	Changes Made
MRFs review - contact - likelihood already 5.	
Vessels calling at B'island - number, type, size.	
Other operatrions in the area	
	Risk Scoring updated - Collision worst credible / Grounding most likely scenario
	updated

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date								
	FP PMSC RA (F) 7/05	HMFO, MM / 16th Jan 2013								
Risk Assessment - Port of Burntisland	Review Due	Revised By / Date								
	Aug-25	MMT, August 2023								



		Inverkeith	ning - Arrival / Sailing Saint David's Beacon	to E	Bert	h								MRF: 020/19 (Contact)		
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	Risk scored at Residual level (Most Likely) Overall Risk		level (Most Likely) (Wo					Wors	ed at R level at Credi		Asi oc.	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Business	Hazard			
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	2	6	4	4	1	5	5 5	5 5	4.	Most likely: Collision between small craft and larger vessel at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two commercial vessels resulting in loss of vessels and loss of life.		
1.2	2 Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Cranes properly stowed on quayside	3	3	6	3	3	1	5	4 5	i 5	4.2			
1.3	3 Grounding Refer also: Risk Assessment (F&T) 7	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	2	4	2	2	1	4	4 4	1 4	3.2			
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	6	6	3	2	10	4 4	8	5.			
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans	3	3	9	6	3	2	10	6 8	10	6.8	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.		
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	3	6	6	2	4	6 8	8	5.			

Content Reviewed	Changes Made
MRFs review	
Vessels calling at B'island - number, type, size.	
Other operatrions in the area	
	Risk Scoring updated

FORTH PORTS LIMITED		Risk Assessment Team / Date HMFO, HMDD, MM / 23rd Jan 2013						
Risk Assessment - Inverkeithing	Review Due	Revised By / Date						
	Aug-25	MMT August 2023						



Braefoot Jetty - Arrival / Sailing Eastern Limits to Berth MRFs reviewed: 34/22 (close quarters), 38/22 (infringment of regulations), 21/23 Risk scored at Residua Causes Controls Hazard (Most Likely) Preventative & Reactive What can go wrong (Event leading to a consequence) How can it go wrong (What action & how frequent) Overall Risk Overall Risk System Failure Human Error 1.1 Collision FTNS Legislation & Guidance Aids to Navigation Environmental Conditions Most likely: Collision between small workboat and larger vessel at slow speed Weather Forecasting / Tidal Predictions resulting in minimal damage and no injuries. Emergency Plans Towage Conservancy Worst credible: Collision between tanker and tug / line boat resulting in loss of vessel, loss of life and pollution 1.2 Contact System Failure Pilotage FTNS Human Error Environmental Conditions Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Jetty Obstruction Emergency Plans Towage 6.875 Most likely: Vessel has slow speed impact with terminal resulting in minimal damage. Conservancy Jetty Regulations Jetty Supervisor Worst credible: Large vessel has a high impact with jetty / tanker alongside resulting in significant damage to vessels, jetty, and serious injuries / loss of life. System Failure 1.3 Grounding uman Error FTNS Legislation & Guidance Environmental Conditions Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Jetty Regulations Most likely: Vessel touchest he bottom in soft mud and continues sailing with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to port, extreme damage and loss of contaminent. 1.4 Sinking / Capsize System Failure FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions **Environmental Conditions** Emergency Plans 4.5 Towage Conservancy Jetty Regulations Most likely: Small Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks in approach to jetties resulting in total loss of vessel and loss of life. .5 Fire / Explosion System Failure Pilotage FTNS Human Error Environmental Conditions Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Most likely: Small fire on board which is quickly and easily extinguished. Conservancy Jetty Regulations Worst credible: Uncontrollable fire, total loss of vessel and cargo, loss of life and large scale pollution 1.6 Loss of Containment (Oil Products) System Failure Pilotage (Within compulsory pilotage Area) Human Error Forth Ports Byelaws & General Directions for Navigation Environmental Conditions Emergency Plans / OPRC Weather Forecasting Most likely: Small spill of non-persistant product that dissipates naturally.

Content Reviewed	Changes Made
MRFs reviewed	
Vessel numbers consulted, as well as type and size.	
	Risk Scoring updated, Contact - Worst credible scenario / Grounding most likely / Sinking + Capsizing most likely scenario updated

Jetty Regulations

Marine Guidelines & Port Information

FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 9/05	Risk Assessment Team / Date HMFO, HMD, MM / 23rd Jan 2013
Risk Assessment - Braefoot Jetty	Review Due	Revised By / Date
	Aug-25	MMT, August 2023

Worst credible: Large scale spill which cannot be contained resulting in port

closures and extensive environmental impact.



		Port of Gra	angemouth - Arrival/Sailing Hen & Chicken	s to	Bei	th									
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris	level (Most Likely)						leve	at Res		Score	MRFs: 53/21 (contact), 61/21 (Contact), 62/21 (contact) 68/21 (contact) 02/ (tow Line parted), 04/22 (Bow Thruster Failure) 07/22 (contact), 13/22
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Dverty Augustia	Environment Environment	Business	Likelihood	People	Ι.	Environment Environment	sk Business	Hazard Risk	(contact), 15/22 (object in propulsion unit) 16/22 (mechanical failure), 20/2 (contact), 23/22 (Consteat), 23/22 (consteat), 23/22 (consteat), 23/22 (consteat), 23/22 (consteat), 23/22 (consteat), 65/22 (Gangway contour), 65/22 (Bridle Parted), 50/22 (Bridle parted), 60/22 (contact), 65/22 (Gangway contour), 68/22 (Mechanical Failure), 04/23 (mechanical failure), 12/23 (contact), 19/23 (contact
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Diversionary Channel Jetty / Terminal Guidelines STS Operations Manual Vessel vetting (tankers)	3	3	6		3	1	5	5	5	5	4.375	Most likely: In dock collision between inbound / outbound vessel and small vessel at slow speed resulting in minimal damage. Worst credible: Collision between inbound/outbound Grangemouth at highe speed resulting in total loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Cranes properly stowed on quayside Dockhead Staff STS Operations Manual Jetty / Terminal Guidelines Vessel vetting (tankers)	5	5	10	5	5	2	6	10	8	10	7.375	Most likely: Vessel has slow speed impact with lead in or fenders resulting in minimal damage. Worst credible: Vessel has heavy impact with lock structure resulting in exreme damage to vessel, locks, and loss ofbusiness due to potential port closure.
1.3	Grounding	Technical Failure Human Error Enviornmental Conditions Surveying Omission Failure of Aids to Navigation Unknown Underwater Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	9	3	3	2	2	10	10	10	6.25	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Jetty / Terminal Guidelines Vessel vetting (tankers)	1	1	2	2	1	1	5	5	5	15	3.25	Most likely: workboat sinks, all crew safely abandon ship Worst credible: Vessel sinks between H&C and locks resulting in total loss o vessel & cargo, channel closure, and loss of life.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Emergency Plans / OPRC Legislation & Guidance Weather Forecasting Jetty/Terminal Guidelines Vessel vetting (tankers)	3	3	9	6	3	2	10	10	10	10	7.625	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire on vessel containing munitions, total loss vessel and cargo, and loss of life.
	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Bunkering Procedure Cargo operations procedures (Including MCA Bulk-handling Regulations)	3	3	3	6	6	1	2	3	4	4	3.875	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
1.7	Loss of Dock Level	System 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	3	1	1	1	6	1	2	5	5	5	3.25	Most likely: Fault with ompounding pumps which is repaired before major lost of dock level. Worst credible: Fault with gates which cannot be repaired before major loss dock level resulting in vessels aground with extreme damage.

Content Reviewed	Changes Made
MRFs reviewed - significant number of contacts - one major contact,	Risk Scoring updated. Collision (most likely + worst credible) / Contact (most likely + worst credible) / Sinking + Capsizing (worst credible) scenarios updated

		Risk Assessment Team / Date DMM, HMFI / 19th Dec 2012
Risk Assessment - Port of	Review Due	Revised By / Date
Grangemouth Hen & Chickens to	Aug-25	MMT, August 2023
Berth	· ·	. •

Hazard Risk Score	MRFs: 53/21 (contact), 61/21 (Contact), 62/21 (contact) 68/21 (contact) 02/22 (tow Line parted), 04/22 (Bow Thruster Failure) 07/22 (contact), 15/22 (object in propulsion unit) 16/22 (mechanical failure), 20/22 (contact), 23/22 (Contact), 35/22 (lose fender weight), 36/22 (contact), 37/22 (Bride Parted), 52/22 (Bride parted), 60/22 (contact), 62/22 (Gride) parted), 60/22 (contact), 62/22 (Gride) parted), 60/22 (contact), 62/22 (Gride) parted), 60/22 (mechanical Failure), 07/23 (Pilot ladder), 09/23 (contact), 10/23 (mechanical failure), 12/23 (contact), 18/23 (contact), 19/23 (lock gates closed as vessel approached) 28/23 (mechanical failure), 29/32 (mechanical failure)
4.375	Most likely: In dock collision between inbound / outbound vessel and small vessel at slow speed resulting in minimal damage.
7.375	Worst credible: Collision between inbound/outbound Grangemouth at higher speed resulting in total loss of vessels and loss of life. Most likely: Vessel has slow speed impact with lead in or fenders resulting in
	wost interest vessel has heavy impact with look structure resulting in minimal damage. Worst credible: Vessel has heavy impact with look structure resulting in exreme damage to vessel, locks, and loss ofbusiness due to potential port closure.
6.25	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
3.25	Most likely: workboat sinks, all crew safely abandon ship Worst credible: Vessel sinks between H&C and locks resulting in total loss of vessel & cargo, channel closure, and loss of life.
7.625	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire on vessel containing munitions, total loss of vessel and cargo, and loss of life.
3.875	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
3.25	Most likely: Fault with ompounding pumps which is repaired before major loss of dock level. Worst credible: Fault with gates which cannot be repaired before major loss of dock level resulting in vessels aground with extreme damage.
5.14	



	Crombie Berthing/Sailing											No significant MRFs during time from previous review.			
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Mc	level ost Like	ely)			(Wors	red at l level st Cred	lible)	graness	Hazard Risk Score	
1.1 (ollision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	2	4	2	2	1	5	5	5	5	3.75	Most likely: Collision between vessel and small vessel at slow speed resulting in minimal damage Worst credible: Collision between Crombie vessel carrying munitions and inbound/outbound Grangemouth tanker resulting in total loss of vessels and loss of life.
1.2 (ontact	System Failure Human Error Environmental Conditions Jetty Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Cranes properly stowed on quayside	3	3	6	3	3	1	5	5	5	5	4.375	Most likely: Vessel has slow speed impact with jetty whilst berthing resulting in minimal damage. Worst credible: High impact with jetty whilst berthing resulting in extreme damage to vessel and jetty, and loss of life.
1.3 (rounding	System Failure Human Error Environmental Conditions Unknown Underwater Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	2	2	4	2	2	1	4	5	5	5	3.625	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4 5	inking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	1	5	4	5	1	5	5	5	5	4.375	Most likely: Vessel sinks outwith main shipping areas, all crew safely abandon ship Worst credible: Vessel sinks in main channel near Crombie resulting in total loss of vessel, channel closure, and loss of life.
	ire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Jetty/Terminal Guidelines	3	3	9	6	3	2	10	10	10 1	10	7.625	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire on vessel containing munitions, total loss of vessel and cargo, and loss of life.
1.6	oss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Bunkering Procedure Standby vessel for bunkering operations	3	3	3	6	9	1	2	3	5 :	5	4.125	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
No MRFs since pervious review.	
Number of vessels calling at Crombie, as well as type and size.	Risk Scoring updated. Collision (most likely), contact (worst credible) Scenario updated

FORTH PORTS LIMITED		Risk Assessment Team / Date DMM, HMFI / 19th Dec2012
Risk Assessment - Crombie	Review Due	Revised By / Date
	Aug-25	MMT, August 2023



	Hound Point - Arrival/Sailing Eastern Limits to Berth												MRFs since previous review: 10/22 (mechanical failure), 66/22 (towline parted)													
Ref.	Hazard	Causes	Controls	Ris	level		level					level										level	I	dual e		
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	Ţ			rall Ri			ì		all Ris		Risk Score												
				Likelihood	People	Property	Environmen	Business	Likelihood	People	Property	Environmen t	Business	Hazard												
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Hound Point Marine Guidelines PPU	4	4	4	4	4	1	5	5	5	5	4.5	Most likely: Collision between small workboat and larger vessel at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two laden tankers resulting in loss of vessels, loss of life and large scale pollution											
1.2	Contact	System Failure Human Error Environmental Conditions Jetty Obstruction	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Hound Point Marine Guidelines PPU / Hound Point Docking System	3	3	6	3	3	1	5	5	5	5	4.375	Most likely: Vessel has slow speed impact with jetty resulting in minimal damage. Worst credible: Large vessel has a high impact contact with another vessel alongside hound point resulting in significant damage to vessels, jetty, loss of containment and serious injuries / loss of life.											
1.3	Grounding	System Failure Human Error Environmental Conditions Unknown Underwater Obstruction	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Hound Point Marine Guidelines	1	1	3	1	4	1	3	5	5	5	3.375	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to port, extreme damage and loss of contaminent.											
	Sinking / Capsize Fire / Explosion	System Failure Human Error Environmental Conditions System Failure	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Hound Point Marine Guidelines Pilotage (Within compulsory pilotage Area) - 2 Pilots	1	3	5	5	5	1	5	5	5	5	4.75	Most likely: Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks in approach to jetties resulting in total loss of vessel and loss of life.											
		Human Error Environmental Conditions	FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Towage Emergency Plans Hound Point Marine Guidelines	3	3	9	6	9	1	5	5	5	5	5.875	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, loss of life and large scale pollution											
1.6	Loss of Containment (Oil Products)	System Failure Human Error 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	3	3	3	6	6	2	6	10	10	10	6.75	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.											

Content Reviewed	Changes Made
MRFs; No contacts since last review	
Changes to guidelines or procedures affecting HP.	
Number of vessels calling, and other traffic in the vicinity.	
	Risk Scoring updated. Contact (worst credible) scenario

FORTH PORTS LIMITED	Risk Assessment Team / Date DMM, HMFI / 19th Dec 2012
Risk Assessment - Houndpoint Arrival / Sailing Eastern Limits to	Revised By / Date MMT, August 2023



	Cruise Vessels at Anchorage (Hound Point / Newhaven)											MRF: 18/22 (mechanical failure)				
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		ored a leve	d		Ris		ored a leve	el			Score	
	(Event leading to a consequence)	Tiow carriego wrong	(What action & how frequent)			Over	all Ri	sk			Over	rall Ri	sk		Risk S	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business		Hazard	
1.1	Dragging Anchor	System Failure Human Error Environmental Conditions	Designated and proven anchorages Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	5	5	5	5	5	1	5	5	5	5		5	Most likely: Vessel drags anchor, then pays out more chain resulting in no further dragging. Worst credible: Vessel drags anchor resulting in vessel going aground or making contact with bridge/Hound Point Terminal. Vessel suffers extreme damage and possibbilty of loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	5	5	10	5	5	1	5	5	5	5	,	5.625	Most likely: Vessel has slow speed impact with small vessel resulting in minimal damage. Worst credible: Vessel has high speed impact with bridge/jetty resulting in
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Tender pack	2	6	6	2	2	1	5	5 5	5	5		4.5	significant damage to vessel and loss of life. Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent. Most likely: Vessel sinks, all crew and passengers safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, and loss of life.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	3	5	5	5	1	5	5	5	5		4.75	
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	5	10	10	5	5	1	5	5	5	5		6.25	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.5	Loss of Containment (Oil Products) - Refer also to FP PMSC RA (F&T)5	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	3	6	3	1	2	5	5	5		4	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Changes Made
Risk Scoring updated.

		Risk Assessment Team / Date HMFO, MM, DMM, HMD, MT&PV / 13th Feb 2013
Risk Assessment - Cruise Vessels at	Review Due	Revised By / Date
Anchorage (Hound Point / Newhaven)	Aug-25	MMT August 2023



Controls Preventative & Reactive (What Littlety) The properties of Reactive (What Littlety) The pool of the properties of Reactive (What Littlety) The pool of
Building (GD19) Guidance (GD19) Guidan
Guidance classing / Tidal Predictions along and in procedure 3 3 3 6 3 3 2 1 0 8 8 10 6.125 Most likely: Collision between two small vessels at slow speed resulting in minimal damage and in minimal damage. Worst credible: Alloninises & Boat Clubs 5 5 10 5 5 2 10 8 8 8 7.375 Guidance closes for Clubs 5 5 10 5 5 5 10 5 5 5 2 10 8 8 8 7.375 Most likely: Collision between two small vessels at slow speed resulting in minimal damage and in vessels and loss of life. Worst credible: Collision between two small commercial craft at high speed resulting in loss of vessels and loss of life. Most likely: Small workboat low impact with floating debris resulting in minimal damage. Worst credible: High impact Contact with bridge, quayside, jetty resulting in significant damage are closes (GD19) along casting / Tidal Predictions large. Guidance closes of life. Most likely: Vessel grounds in soft mud and refloats on following side with damage. Worst credible: Vessel ground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
Guidance claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Authorities & Boat Clubs so for the claims (GD19) alton casting / Tidal Predictions lans ocal Autho
Guidance titons (GD19) atton (GD19) (GD19
Guidance tions (GD19) casting / Tidal Predictions lans
nse procedure Most likely: Vessel sinks, all crew safely abandon ship
Guidance (GD19) ccasting / Tidal Predictions lans ocal Authorities & Boat Clubs nse procedure 4 4 8 4 8 2 10 10 8 10 7.75 Most likely: Small fire on board which is quickly and easily extinguished.
Guidance tions (GD19) casting / Tidal Predictions lans ocal Authorities & Boat Clubs nse procedure 4 4 4 4 4 2 5 6 6 8 8 5.5 Most likely: Small spill of non-persistant prodcut that dissipates naturally. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
Most likely: Small spill of non-persistant prodcut

Content Rev	iewed	Changes Made							
reral contact incidents with one major inc	ident resulting in a large cost to	ci Risk Scoring updated.							
FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 14/07	Risk Assessment Team / Date MT&PV, HMFO, MM, DMM, HMD / 13TH Feb 2013							
	Review Due	Revised By / Date							
Risk Assessment - Forth - River	Aug-25	MMT August 2023							



	Cruise Vessel Tender Operations (Newhaven / Hound Point)								MRF: 55/21 (Contact), 56/21 (Contact), 57/21 (contact), 58/21 contact, 17/22 Damage to tender, 31/22 (contact), 24/23 (mechanical failure)						
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)		(M	ored a leve ost Li Over	el ikely)		Risk scored at Residual level (Worst Credible) Overall Risk				e)	Risk Score	
				Likelihood	People	Property	Environmen	Business	Likelihood	People	Property	Environmen t	Business	Hazard F	
1.1	Collision	System Failure Human Error Environmental Conditions	Legislation & Guidance FTNS Weather Forecasting, Tidal Predictions & Monitoring Tender Pro-forma & Passage Planning Tender Pack	5	10	10	5	5	2	10	10	8	10	8.5	Most likely: Collision between two tenders at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between a commercial vessel and tender carrying passengers resulting in loss of tender and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Floating Debris	FTNS Legislation & Guidance Weather Forecasting / Tidal Predications & Monitoring Tender Traffic Control Procedures Tender Proforma and Passage Planning Tender Pack	5	5	5	5	5	2	10	10	8	10	7.25	Most likely: Tender has slow speed impact with pontoon resulting in minimal damage. Worst credible: Tender has heavy impact with pontoon resulting in significant damage to tender and loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions Uncharted Object	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans Conservancy Tender Proforma and Passage Planning Pack Tender	5	5	5	5	5	2	4	6	4	6	5	Most likely: Tender grounds in soft mud and continues sailing with minimal damage Worst credible: Tender hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans Conservancy Tender Proforma and Passage Planning Pack Tender	1	3	4	3	3	1	5	5	3	5	3.875	Most likely: Tender sinks, all crew and passengers safely abandon ship
1.5	Fire	System Failure Human Error Environmental Conditions	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans	2	2	4	2	2	1	5	4	3	4	3.25	Worst credible: Tender sinks resulting in total loss of vessel and loss of life. Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans Conservancy Tender Proforma and Passage Planning Tender Pack	4	4	4	4	4	1	2	2	4	4	3.5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: spill which cannot be contained resulting in environmental impact.

Conte	nt Reviewed	Changes Made
Greatly reduced amount of cr	ruise traffic due to COVID which has	
impacted the	amount of incidents.	
		Risk Scoring updated.
FORTH PORTS LIMITED	I December 1 ID	Diels Accessment Term / Date
FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F) 15/06	IMM_DMM_HMFO_March_2014

Revised By / Date MMT August 2023

Risk Assessment - Cruise Vessel Review Due
Tender Operations (Hound Point / Aug-25



Tay River Passage - Arr/Dep Buoy to Berth No MRFs Ref. Risk scored at Residual Risk scored at Residual Hazard Causes Controls level level (Most Likely) (Worst Credible) Preventative & Reactive What can go wrong How can it go wrong (Event leading to a consequence) (What action & how frequent) Overall Risk Overall Risk Likelihood Property Environmen Likeliho People System Failure Most Likely: Collision with small craft. 1.1 Collision Pilotage Human Error FTNS Legislation & Guidance Environmental Conditions Norst Credible: Collision between cruise vessel and rig Aids to Navigation
Weather Forecasting / Tidal Predictions 3.375 Emergency Plans Towage Conservancy System Failure 1.2 Contact Pilotage Most Likely: Light Contact with the quayside. Human Error FTNS (including additional Safety checks regarding Power Environmental Conditions Worst Credible: Extremly heavy landing structural damage to Quay and Failure Legislation & Guidance Aids to Navigation
Weather Forecasting / Tidal Predictions 5.625 Emergency Plans Towage Conservano System Failure 1.3 Grounding Most Likely: Grounding on soft material, no loss of containment with Human Error FTNS essel continuing on. Environmental Conditions Legislation & Guidance Aids to Navigation Worst Credible: Grounding on solid sea bed, loss of containment vessel Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy 1.4 Sinking / Capsize System Failure Pilotage Most Likely: Small craft sinking with no casualties Human Error FTNS **Environmental Conditions** Legislation & Guidance Worst Credible: Cruise vessel sinking with loss of vessel and fatalities Aids to Navigation Weather Forecasting / Tidal Predictions 8 8 8 8 1 5 5 5 Emergency Plans Towage Conservancy 1.5 Fire / Explosion System Failure Pilotage Most Likely: Small fire onboard, quickly extinguished. Human Error FTNS 4.375 Environmental Conditions Legislation & Guidance Norst Credible: Vessel uncontrolable fire, vessel total loss. Weather Forecasting / Tidal Predictions Emergency Plans System Failure 1.6 Loss of Containment (oil products) Most likely: Small spill of non-persistant product that dissipates naturally. Pilotage Human Error FTNS Legislation & Guidance Environmental Conditions Worst credible: Large scale spill which cannot be contained resulting in Aids to Navigation port closure and extensive environmental impact. Weather Forecasting / Tidal Predictions 1 Emergency Plans Towage Conservancy Vetting (Tankers)

Changes Made
Reviewed Post Baltimore incident - Additional Safety check (power
failure)control added.
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FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (T) 01/07	DMM, HMD 13th Dec 2012
Risk Assessment - River Passage Tay	Review Due	Revised By / Date
(General)	Aug-25	MMT July-24

4.60

No MRFs



	Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth										MRF: None				
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)		(Me	lev ost I				Re:	sidua rst C	ored a al leve credib	el le)	Hazard Risk Score	and a route
				Likelihood	People	Property	Environment	Business	Likelihood	Pecole	Property	Environment	Business	Hazard F	
1.1	Cellision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning merely Conservancy Towage Audit Declaration / Tug Vetting Large Vessel Movement Notice to Marners	2	4	4	4	4	1	5	5	i 5	C)	4.5	Most Likely: Collision with small craft while underway. Worst Credible: Collision with Tug/anchor handler in fairway.
1.2	Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Communication Error	Pilotage / Towmaster FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plannian Towage Planning meeting Conservancy Additional Fendering (if achievable on berth) Towage Audit Declaration / Tug Vetting Simulation Trials	2	2	6	2	6	2	8	10	0 8	10	6.5	Most Likely: Contact with navigational buoy Worst Credible: Heavy Contact with berthed vessel/rig
1.3	Grounding	System Fallure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Towage Audit Declaration / Tug Vetting Simulation Trials	2	2	2	4	6	1	5	5	; 5	5	4.25	Most Likely: Tug Grounding on soft material, no loss of containment and vessel continuing Worst Credible: Tug / AHT Grounding on solid sea bed, loss of containment vessel unable to refloat.
	Sinking / Capaize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage / Towmaster FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning meeting Conservancy Towage Audit Declaration / Tug Vetting Simulation Trials	1	5	5	5	5	1	5	5	5	5	5	Most Likely:Sinking of Tug during operation Worst Credible: Sinking within navigational channel loss of containment.
	Fire / Explosion	Collision Contact Human Error Technical Failure Loss of Containment	Pilotago / Towmaster FTNS Legislation & Guidance Akds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning meeting	3	3	6	3	3	1	5	5	5	5	4.375	Most Likely: Small fire on vessel, extinguished on board Worst Credible: Large fire on rig, complete loss.
1.6	Lass of Containment (oil products)	System Fallure Human Error Environmental Conditions	Pilotage / Towmaster FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning meeting Conservancy Towage Audit Declaration / Tug Vetting Bunkering Procedure	2	2	2	2	2	1	3	- 5	5	5	3.25	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closure and extensive environmental impact.

Content Reviewed	Changes Made
All content reviewed	
All Curterit reviewed	
	Risk Scoring updated.

		Risk Assessment Team / Date DMM, HMD 09th January 2013
Risk Assessment - Port of Dundee	Review Due	Revised By / Date
- Oil Pige - Arrival/Sailing Port	Δug-25	CHM/HMET/MMD/MCM / MOD August 2023



	Tay - River Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workboats etc.)								MRF: 064/22 (tow rope parted), 62/22 (mechanical failure), 27/23 (contact), 37/23 (c						
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Risk scored at Residu level (Most Likely)		(Most Likely) (Worst Credible)								Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Property	1 =	Business Business	Likelihood	Pannla	Τ.	all Ri	Business as	Hazard Risk Score	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	ETNS Legislation & Guidance Adds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs	2	2	4	2	2	2	1	0 10	10	10	6.25	Most Likely: Collision with another small craft on river. Worst Credible: Collision with other small vessel causing loss of both vessels.
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs	5	5	10	5	5	2	1	0 10	8	10	7.87	Most Likely: Light contact with the quayside while berthing. Worst Credible: Heavy Contact with another berthed small vessel resulting in loss of both vessels
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission	FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs Conservancy	2	2	2	2	2	1	4	1 4	4	4	3	Most Likely: Grounding of small vessel on soft silt, which continue on (tidal basin). Worst Credible: Grounding on hard rock, causing loss of containment, unable to relicat on same tide.
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	FTNS Legislation & Guidance Adds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs	2	4	8	6	6	1	4	1 4	4	4	5	Most Likely: sinking of small vessel outside of navigational channel, with limited loss of containment. Worst Credible: Sinking of small vessel within navigational channel with loss of containment.
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 Maniners Survey / dredging Programme / Schedule Pilot Vessel Training & Certification Good Housekeeping Towage Guidelines Small Vessel SMS	3	3	6	3	3	1	5	5 5	5	-5	4.37	Most Likely: small fire which is extinguished by crew. Worst Credible: Major fire leading to total loss of vessel.
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	FTNS Legislation & Guidance Akds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Lisiano with Local Authoritys & Boat Clubs Bunkering Procedure	2	2	2	2	2	1	3	3 5	5	5	3.25	Most Likely: Small loss of non-persistant oil product. Worst Credible: Large spill of persistant product.

Content Reviewed	Changes Made
All content reviewed	Risk Scoring updated.

	PP PMSC RA (T) 06/04	Risk Assessment Team / Date DMM, HMD 09th January 2013
Risk Assessment - River Tay	Review Due	Revised By / Date
Transit : Parthing/Cailing Cmall	Aug-25	CHM/HMET/MMD/MCM / MOD August 2023



MRF - 071-2023 (Loss of anchor Forth) 041-2024 (Tender boats proximity to HP)

			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)	L	(Mc	leve ost Li Over	ikely)	isk		(Wor	leve st Cre Overa	edible all Ris) k	ırd Risk Score	MRF: 022/22 Loss of Anchor 069/21 (Dragging Anchor) 050/20 (fouled anchor), 049/20(fouled anchor), 017/18 (Dragging Anchor)
				Likelihood	People	Property	Environmer	Business	Likelihood	People	Property	Environme t	Business	Hazard	
1.1	Dragging Anchor	Environmental Conditions Human Error / Failure System Failure	Designated and Proven Anchorages FTNS Weather Forecasting / Tidal Predictions Towage Byelaws & General Directions Pilotage Emergency Plans / OPRC	5	5	5			2	8	10	10	10	7.25	Most likely: Vessel drags anchor, then pays out more chain resulting in no further dragging. Worst credible: Vessel drags anchor resulting in vessel going aground or making contact with bridge/jetty. Vessel suffers extreme damage and possibbilty of loss of life.
1.2	Contact	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Towage Byelaws & General Directions Weather Forecasting / Tidal Predictions Designated and Proven Anchorages Notice to Mariners Emergency Plans / OPRC	2	4	6	4	4	1	5	5	5	5	4.75	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Vessel has high speed impact with bridge/jetty resulting in significant damage to vessel and loss of life.
1.3	Grounding	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) Passage plan – master / pilot information exchange FTNS Towage Weather Forecasting / Tidal Predictions & Tidal Monitoring Designated and Proven Anchorages Emergency Plans / OPRC	2	2	4	2	4	1	1	5	5	5	3.5	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of con
1.4	Sinking / Capsize	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions	2	2	2	2	2	1	5	5	5	5	3.5	Most likely: Vessel sinks, all crew safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, and loss of life.
1.5	Fire / Explosion	Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting	3	6	6	3	3	1	5	5	5	5	4.75	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.6	Loss of Containment (Oil Products)	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Bunkering Procedure	3	3	3	3	3	2	4	10	10	10	5.75	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRF's relating to the RA	Risk Scores Adjusted
All Hazards	
All Risk controls	
All Likelyhoods	
All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 1/07	DMM, HMFO, HMFI, HMD, MT&PV / 11th Jan 2013
Risk Assessment - Vessels at Anchor		Revised Rv / Date
	Jul-26	July 2024, MMT



MRFS - 37-2022 (Bridle leg parted) 22-2023 (stbd engine fail) 37-2023 (Contact underwater object Dundee) 39-2023 (Dangerous towine release) 52-2023 (Fender contact) 72-2023 (Poor seamanship, procedures and mechanical failure) 07-2024 (Tow rope parted) 21-2024 (Contact with towed vessel) 40-2024 (Bridal damaged towed ship's mast)

(Event leading to a consequence) 1.1 Capsizing / Flooding (Convential Tugs) Human Systen 1.2 Capsizing / Flooding (Non- Convential Tugs) 1.4 Capsizing / Flooding (Non- Convential Human Human Tugs)		Controls Preventative & Reactive (What action & how frequent) Towage Guidelines + Audit Tug SMS FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Pilotage	Ris	(M	level ost Lil Overa	l kely)	k		level st Cre Overa	dible) II Risk		Hazard Risk Score	MRF: 99/2022 (Loss of Comms)23/2022 (Contact)20/2022 Contact) 14/2022 (Contact) 13/2022 (Contact) 07/2022 (Contact) 03/2022 (Contact) 03/2022 (Tow line parted)06/4/2021 (Towrope fouled in prop) 03/72021 (Dangerous occurence) 016/2021 (Uncontrolled release of brieflo)70/20(contact), 02/20(collision), 005/20(contact), 004/20(contact), 004/20(cont
Human Systen 1.2 Capsizing / Flooding (Non- Convential Tugs) Human Hum	an Error / Failure em Failure	Tug SMS FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Pilotage	Likelihoo	People	Property	Environmen t	Business	Likelihood eople	perty	D D	ssa	zard	(potential greatiang), ever to (parted termine), or in to (creatiang), ever to (contact)
Human Systen 1.2 Capsizing / Flooding (Non- Convential Tugs) Human Hum	an Error / Failure em Failure	Tug SMS FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Pilotage							Pro	t t	Business	На	(potential grounding), UBU19 (parted towine), U74/16 (Grounding), U25/19 (Contact)
Tugs) Human		Crew Training Pre Operations Checks/ Briefings Emergency Tow Release Requirement for Gog Line to be used	3	3	3	3	3	2 10	10	10	10	6.5	Most Likely: Tug experiences girting but is able to recover with no significant consequence/damage Worst Credible: Tug experiences girting causing the tug to capsize with total loss of life and vessel
Systen		Towage Guidelines + Audit Tug SMS FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Pilotage Crew Training Pre Operations Checks/ Briefings	1	1	1	1	1	1 5	5	5	5	3	Most Likely: Tug experiences girting but is able to recover with no significant consequence/damage Worst Credible: Tug experiences girting causing the tug to capsize with total loss of life and vessel
Human	an Error / Failure em Failure	FTNS MS Trig SMS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Crew Training & Certification Good Housekeeping Towage Guidelines	3	6	6	3	9	1 5	5	5	5	5.5	Most Likely: Vessel suffers a minor fire which is extinguished quickly and results in no significant damage Worst Credible: Vessel suffer an extensive fire which results in loss of life and total loss of the vessel
Human	ronmental Conditions an Error / Failure em Failure	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predications Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Tun SMS Cenut Training/Qualifications	5	5	10	5	10	2 10	10	10	10	8.75	Most Likely: Vessel makes minor contact with pier/jetty/object resulting in no significat damage to either the vessel or object and no injuries Worst Credible: Vessel makes heavy conact with an object resulting in significant damage to both the vessel and object with injuries/fatalities
Human	ronmental Conditions an Error / Failure em Failure	Byelaws & General Directions Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predications Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Turn SMS Crew Training/Qualifications	3	3	6	3	9	1 5	5	5	5 .	5.125	Most Likely: Tug collides with another vessel at slow speed resulting in no significant damage to either vessel and no injuries Worst Credible: Tug collides with another vessel at high speed resulting in possible loss of the vessels and injuries/fatalities
Human		Byelaws & General Directions Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predications - spelling Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Tun SMS Crew Training/Qualifications	3	3	3	3	6	2 10	10	10	10	3.875	Most Likely: Vessel reuns aground but suffers no significant damage and is able to be refloated with the tide Worst Credible: Vessel runs aground in the entrace to a port and cannot be refloated resulting in loss of the vessel, possible injuries/fatalities and loss of business

Content Reviewed	Changes Made
MRF's relating to the RA	Introduced additional (Capsizing / Flooding) Conventional and Non Conventional
All Hazards	Hazards
All Risk controls	Risk Scoring Adjusted
All Likelyhoods	
All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 2/07	MT&PV, MM, HMFO, DMM, HMD / 13th Feb 2013
Risk Assessment - Towage	Review Due	Revised By / Date
Operations	Jul-26	July 2024, MMT



	Forth & Tay - Immobilised Vessels (at Anchor or Alongside)												IRF 015/15 (Fire) 072/19 (Fire)		
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris	(Mo	level ost Lil	kely)			(Worst	evel Cred	ble)	al	k Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Droperty Property	Environmen t	Business	Likelihood	_	Property Environmen			Hazard Risk	
	Allision Refer also to FP PMSC RA (F&T) 1	Human Error Technical Failure Enviromental Conditions	Byelaws & General Directions Weather Forecasting & Monitoring Marine Guidelines & Port Information Standby Tug at Anchor FTNS Extra Moorings	2	4	4	2	6	2		10 1		0	d v	flost likely: Vessel has slow speed impact with buoy resulting in minimal amage. Vorst credible: Vessel has high energy impact with bridge/jetty resulting in ignificant damage to vessel and loss of life.
	Grounding Refer also to FP PMSC RA (F&T) 1	Human Error Technical Failure Enviromental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting & Monitoring Marine Guidelines & Port Information Notice to Mariners Standby Tug at Anchor	3	3	3	3	3	1	3	5	5 5	;	3. 75 m	flost likely: Vessel grounds in soft mud and refloats on following tide with ninimal damage. Vorst credible: Vessel hard aground, cannot be refloated resulting in major isruption to ports, extreme damage and loss of contaminent.
	Fire / Explosion Refer also to FP PMSC RA (F&T) 1	Human Error Technical Failure	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting	3	6	9	3	3	1	5	5	5 5	5 5		flost likely: Small fire on board which is quickly and easily extinguished. Vorst credible: Uncontrollable fire, total loss of vessel, and loss of life.

Content Reviewed	Changes Made
MRF's relating to the RA	Risk Scoring Adjusted
All Hazards	
All Risk controls	
All Likelyhoods	
All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 3/07	MM, DMM / 26th Feb 2013
Risk Assessment - Immobilised	Review Due	Revised Bv / Date
Vessels	Jul-26	July 2024, MMT



POLREP 16/2023 (MGO overflow in Burntisland)

Forth & Tay - Bunkering Operations In Dock									POLREP (Leith) 07/18 - 97/19 (Gmth bunker without permission)				
What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Risl	(M	level ost Lik	ely)			le /orst	evel Credil	ole)	sk Score	
((Likelihood	People			_	Likelihood				Hazard Ri	
1 Collision between bunker vessel and receiving vessel	Human Error Technical Failure Enviromental 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	3	6	3		3	1				4.375	Most likely: Slow speed collision between both vessels resulting in minimal damage and no loss of containment Worst credible: Heavy collision between both vessels resulting in extreme damage, loss of ife and loss of containment
Soss of Containment (Oil Products)	Human Error Technical Failure Enviromental Conditions	Pilotage FTNS - Scheduling, VTS Forth Bylaws & General Directions Notice To Mariners 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 Managment	3	3	3	3	3	1	3	4 4	5	3.5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and
4 Fire/Explosion	Human Error Technical Failure	FTNS - Scheduling, VTS Bylaws & General Directions Notices To Mariners Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedure. Mooring Procedures Vetting (Bunker Vessel)	2	4	4	2	2	1	5	5 5	5	4	extensive environmental impact. Most likely: Small fire at bunker station which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.	What can go wrong (Event leading to a consequence)	What can go wrong (Event leading to a consequence) 1.1 Collision between bunker vessel and receiving vessel 1.2 Loss of Containment (Oil Products) Human Error Technical Failure Environmental Conditions 1.3 Fire/Explosion Human Error	What can go wrong (Event leading to a consequence) How can it go wrong Preventative & Reactive (What action & how frequent) Pilotage Passage plan / berthing plan – master / pilot information exchange Environmental Conditions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring/Unmooring Procedures Lock Gates Bunkering Procedures Environmental Conditions Pilotage Frins- Scheduling, VTS Frombley Scheduling, VTS Frenders Mooring/Unmooring Procedures Lock Gates Bunkering Procedures Frins- Scheduling, VTS Frombley	What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Human Error Technical Failure Enviromental 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/Ummooring Procedures Lock Galtes Bunkering Procedures Lock Galtes Bunkering Procedures Lock Galtes Bunkering Procedures Emergency Plans / OPRC Weather Forecasting Weather Parameters Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedures Lock Galtes Bunkering Procedures Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedures Lock Galtes Bunkering Procedures FTNS - Scheduling, VTS Fenders either side of manifold Mooring Procedures Lock Galtes Bunkering Procedures Vetting Bunker vessel) Bunkering Procedures Lock Galtes Port Traffic Managment 1.4 Fire/Explosion Human Error Technical Failure FTNS - Scheduling, VTS Bunkering Procedures Lock Galtes Lock	What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Human Error Technical Failure Environmental Conditions FINS - Scheduling, VTS Bylaws & General Directions Notice To Mariners Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedures Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedures Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedures Emergency Plans / OPRC Weather Forecasting Weather Parameters Bunkering Procedures Moning Procedures	What can go wrong (Event leading to a consequence)	What can go wrong (Event leading to a consequence) How can it go wrong Preventative & Reactive (What action & how frequent)	National Process National Pr	What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Human Error Technical Failure Environmental Conditions Environmental Conditions FINS - Scheduling VTS Bylavas & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tachnical Failure Environmental Conditions FINS - Scheduling VTS Bylavas & General Directions Notice To Mariners Environmental Conditions FINS - Scheduling VTS Bylavas & General Directions Notice To Mariners Environmental Conditions FINS - Scheduling VTS Forth Bylavas & General Directions Notice To Mariners Environmental Conditions FINS - Scheduling VTS Forth Bylavas & General Directions Mooring/Landon Weather Forecasting Weather Foreca	What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (What action & how frequent) Preventative & Reactive (What action & how frequent) Preventative & Reactive (What action & how frequent) Preventative A Reactive (What action & how frequent) Preventation & Reactive (What action & how frequent)	What can go wrong (Event leading to a consequence) How can it go wrong Preventative & Reactive (What action & how frequent) Proventative & Reactive (What action & how frequent) Proventation & how frequent Proventation & how frequent Pro	What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (What action & how frequent) Preventable & Reactive (What action & how frequent) Down the provided of th	What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Find the control of the co

Content Reviewed	Changes Made
MRF's relating to the RA All Hazards	Risk Scoring Adjusted
All Risk controls	
All Likelyhoods All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 4/07	HMFO, HMFI, MM, HMD, DMM 20th Feb 2013
Risk Assessment - Bunkering	Review Due	Revised By / Date
Operations In Dock	Jul-26	July 2024, MMT



Forth & Tay - Bunkering Operations Tidal Waters MRF: 05/2022 (Mooring Line Parting) 04/2022 (Mechanical faile Ref. Risk scored at Residual Risk scored at Residual Hazard Causes Controls Risk Score level (Most Likely) (Worst Credible) How can it go wrong Preventative & Reactive What can go wrong (Event leading to a consequence) (What action & how frequent) Overall Risk **Overall Risk** Likelihood Likelihoo Property People Property 1.1 Collision with bunker vessel and Human Error Technical Failure Passage plan / berthing plan – master / pilot information exchange receiving vessel Enviromental Conditions FTNS - Scheduling.VTS Bylaws & General Directions Notice To Mariners Weather Parameters 4.375 Emergency Plans / OPRC Most likely: Slow speed collision between both vessels resulting in minimal Tugs damage and no loss of containment Fenders Mooring/Unmooring Procedures Worst credible: Heavy collision between both vessels resulting in extreme Bunkering Procedure damage, loss of life and loss of containment 1.3 Loss of Containment (Oil Products) Human Error Pilotage FTNS - Scheduling, VTS Technical Failure Bylaws & General Directions N To M Emergency Plans / OPRC Weather Forecasting Weather Parameters 5 3.75 Fenders either side of manifold Mooring Procedures Bunkering Procedure Most likely: Small spill of non-persistant product that dissipates naturally. Vetting (Bunker Vessel) Oil Pollution response standby vessel Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact. 1.4 Fire/Explosion Human Error Technical Failure FTNS - Scheduling, VTS Bylaws & General Directions Notices To Mariners Emergency Plans / OPRC Weather Forecasting 2 Weather Parameters Tugs Bunkering Procedure. Mooring Procedures Most likely: Small fire at bunker stationwhich is quickly and easily extinguished. Vetting (Bunker Vessel) Bunkering Procedure Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.

Content Reviewed	Changes Made
MRF's relating to the RA	Risk Scoring Adjusted
All Hazards	
All Risk controls	
All Likelyhoods	
All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 5/07	HMFO, HMFI, MM, HMD, DMM 20th Feb 2013
Risk Assessment - Bunkering	Review Due	Revised By / Date
Operations Tidal Waters	Jul-26	July 2024, MMT



	Forth & Tay - NAABSA Berths									No relevant MRF's since previous review				
Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong								(Wors	level t Cre	dible	e)	isk Score	
			Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard R	
Capsize/Flooding	Human Error Technical Failure Enviromental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Inspections Survey Programme	2	2	2	4	2	1	5	5	5	5		Most likely: Vessel takes on water which is contained resulting in no long term damage to the vessel and no injury Worst credible: Vessel capsizes resulting in total loss of vessel and multifatalities
Fire	Human Error Technical Failure Enviromental Conditions	NAABSA Berth Procedures Emergency Procedures Welcome Pack	3	6	9	3	6	1	5	5	5	5	5.5	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
Hull Damage	Human Error Enviromental Conditions	NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme Weather Forecasting / Tidal Predictions & Monitoring Byelaws & General Directions	1	1	2	1	3	1	5	5	5	5	3.375	Most likely: Vessel suffers minor hull damage which can be easily repiaire and no injuries occur. Worst credible: Vessel suffers extensive hull damage resulting in flooding and loss of life
	What can go wrong	What can go wrong (Event leading to a consequence) Capsize/Flooding Human Error Technical Failure Enviromental Conditions Human Error Technical Failure Enviromental Conditions Human Error Technical Failure Enviromental Conditions	Hazard What can go wrong (Event leading to a consequence) Human Error Technical Failure Enviromental Conditions FINS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Procedures Emergency Procedures Welcome Pack Hull Damage Human Error Enviromental Conditions NAABSA Inspections Survey Programme NAABSA Inspections Survey Programme NAABSA Inspections Survey Programme Weather Forecasting / Tidal Predictions & Monitoring NAABSA Inspections Survey Programme Weather Forecasting / Tidal Predictions & Monitoring	Hazard Causes Controls Preventative & Reactive (What action & how frequent) Polymer	Hazard Causes How can it go wrong (Event leading to a consequence) How can it go wrong Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the condition Preventative & Reactive (What action & how frequent) Pool of the condition Preventative & Reactive (What action & how frequent) Pool of the condition Preventative & Reactive (What action & how frequent) Pool of the condition Preventative & Reactive (What action & how frequent) Pool of the condition Pool of the condition Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & how frequent) Pool of the conditions Preventative & Reactive (What action & Reactive (W	Hazard What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Human Error Technical Failure Enviromental Conditions FINS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Procedures Enviromental Conditions Fire Human Error Technical Failure Enviromental Conditions NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme NAABSA Inspections Survey Programme NAABSA Inspections Survey Programme NAABSA Inspections & Monitoring	Hazard Causes How can it go wrong (Event leading to a consequence) Human Error Technical Failure Enviromental Conditions NAABSA Berth Procedure NABSA Berth Procedures Emergency Procedures Em	Hazard What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Human Error Technical Failure Enviromental Conditions FINS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Inspections Survey Programme NAABSA Berth Procedures Emergency Procedures Welcome Pack Human Error Enviromental Conditions NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Berth Procedures Emergency Procedures Emergency Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme NAABSA Berth Procedures Emergency Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme NAABSA Inspections & Monitoring	Hazard What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (What action & how frequent) Preventative & Reactive (What action & how frequent) Overall Risk Poolulayin FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Inspections Survey Programme Prive Environmental Conditions NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme 1 1 2 1 3 1 1 2 1 3 3 1	Hazard What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) Human Error Technical Failure Enviromental Conditions Fire Human Error Technical Failure Enviromental Conditions Fire Human Error Technical Failure Enviromental Conditions NAABSA Berth Procedures Welcome Pack NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme NAABSA Inspections Survey Programme Risk scored at Residual level (Most Likely) Overall Risk Provering Page of P	Hazard What can go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedures Environmental Conditions Fire Human Error Technical Failure Environmental Conditions Fire Human Error Technical Failure Environmental Conditions NAABSA Berth Procedures Welcome Pack Welcome Pack Human Error Technical Failure Emergency Procedures Welcome Pack NAABSA Berth Procedures Welcome Pack NAABSA Inspections Survey Programme Neares Near	Causes How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) How can it go wrong (Event leading to a consequence) FTNS FTN	Hazard What can go wrong (Event leading to a consequence) Preventative & Reactive (What action & how frequent) Preventative & Reactive (What action & how frequent) Preventative & Reactive (Worst Civelible) Overall Risk Overall Risk Overall Risk Pool Po	Causes How can it go wrong (Event leading to a consequence) How can it go wrong How can it go wrong (Event leading to a consequence) How can it go wrong How can it go wrong (Event leading to a consequence) FTNS FTNS

Content Reviewed	Changes Made
MRF's relating to the RA	Risk Scoring Adjusted
All Hazards	
All Risk controls	
All Likelyhoods	
All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 06/07	DMM, HMFO, HMFI, HMD, MT&PV / 11th Jan 2013
Risk Assessment - NAABSA Berths	Review Due	Revised By / Date
	Jul-26	July 2024 MMT



	Forth & Tay - Diving Operations									No relevant MRFs since previous review								
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	(Me		Risk scored at Residual level (Most Likely)				level (Most Likely)			Risk scored at Residual level (Worst Credible) Overall Risk			level est Credible)		
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Business	Hazard Risk					
1.1	Swamping / turbulence / interaction	Human Error Enviromental Conditions	Forth Ports Dive Procedure (Permit/permissions) Dive Signals displayed Established Communications FTNS Exclusion Zones Speed Restrictions Notice to Mariners Dive Supervisor Local Monitoring	3	9	3	3	6	2	10	4 2	10	5.875	Most Likely: Passing vessel comes too close or passes at speed which will alarm divers and possibly result in minor injury. Worst Credible: Passing vessel comes too close or passes at speed which results in fatality to diver.				
1.2	Contact / Collision	Human Error Enviromental Conditions	Forth Ports Dive Procedure (Permit/permissions) Dive Signals displayed Established Communications FTNS Exclusion Zones Speed Restrictions Notice to Mariners	1	3	2	1	2	1	5	5 3	5	3.25	Most Likely: Vessel makes contact with diver / dive boat resulting in minor injuries. Worst Credible: Vessel makes contact with diver / dive boat resulting in fatalities and loss of dive boat				

Content Reviewed	Changes Made
All Hazards	Risk Scoring Adjusted
All Risk controls	
All Likelyhoods	
All Risk Scores	

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 7/05	HMFI/HMFO/HMD/MM/CHM 03rd Sep 14
Risk Assessment - Diving Operations	Review Due	Revised By / Date
	.lul-26	July 2024 MMT

MRF 068/2018 - Swim Event

		Forth 8	& Tay - Recreational Events (e.g.swim even	ts)																
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)		Reactive (Most Likely)						Preventative & Reactive (Most Likely)						leve st Cr	t Res I edible	Risk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard Ris						
1.1	Collision / contact	Human Error Enviromental Conditions	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	6	2	10	2	2	10	4.75	Most Likely: Col Worst Credible:					
1.2	Swamping / interaction / turbulence	Human Error Enviromental Conditions	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	2	10	2	2	10	4.25	Most Likely: Pas injury. Worst Credible:					

Most Likely:	Contact b	etween pa	rticipant and	d other water	r user resul	ting in alarn	n or minor inury.	

Worst Credible: Contact between participant and other water user resulting in fatality.

Most Likely: Passing vessel comes too close or passes at speed causing alarm and possibly result in minor

Worst Credible: Passing vessel comes too close or passes at speed which results in falality.

Content Reviewed	Changes Made
	Risk Scoring adjusted
All Hazards	
All Risk controls	
All Likelyhoods	
All Risk Scores	
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FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 8/05	HMFI/HMFO/HMD/MM/CHM 03rd Sep 14
Risk Assessment - Recreational	Review Due	Revised By / Date
Events	Jul-26	July 2024, MMT



	Forth & Tay - Underwater Cables & Pipelines											No relevant MRFs since previous review																																											
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris				level (Most Likely)		level			level (Most Likely)			level (Most Likely)			(Most Likely)		level (Most Likely)		level (Most Likely)		level (Most Likely)		level (Most Likely) Overall Risk		level (Most Likely)				Risk scored at R level (Worst Credi		rel redible)																				
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Business	Hazard Risk																																										
1.1	Contact	Human Error Technical Failure Enviromental Conditions	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	3	3	3	3	3	1	3	5	5 5	3.75	Most Likely: Minor contact is made with a pipeline/cable resulting in no significant damage Worst Credible: Pipleine/Cable receives heavy contact resulting in substantial damage causing widespread pollution or major loss of supply from cables																																									
1.2	Fire / Explosion	Human Error Technical Failure Enviromental Conditions	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	1	1	1	1	1	3	5 !	5 5	2.75	Most Likely: Small fire at production end resulting in minimal impact to pipeline Worst Credible: Major fire/explosion at production end resulting in severe damage to a pipeline and extensive widespread pollution																																									
1.3	Loss of Containment / Power / Communication	Human Error Technical Failure Enviromental Conditions	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	2	2	2	1	2	5 5	5 5	3.125	Most Likely: Minor loss of containment/supply which is rectified quickly and results in no widespread pollution/effects Worst Credible: Major loss of containment resulting in extensive and widespread pollution/loss of powere, data																																									

Content Reviewed	Changes Made
All Hazards All Risk controls All Likelyhoods All Risk Scores	Risk Scoring Adjusted

FORTH PORTS LIMITED		Risk Assessment Team / Date CHW/MM 18th Feb 2015						
Risk Assessment - Underwater Cables & Pipelines		Revised By / Date						
	Jul-26	July 2024, MMT						

POLREPS - 04-2023 (Sunken vessel sheen) 05-2023 (Unkown sheen) 07-2023 (FV Diesel sheen) 08-2023 (CTV Diesel sheen) 09-2023 (Bitumen spill) 11-2023 (Granton FV Large diesel spill) 12-2023 (Run-off spill Rosyl) 13-2023 (Leith outer berth Hydraulic spill) 15-2023 (HP Hydraulic oil spill large) 05-2024 (Navy oil sheen)

POLREP: 05/2022 (Leaking Gangway Seal) 08/2021 (Cruise Tender)07/2021 (Oil sheen) 05/21 (Oil Sheen) 02/2021 (Cruise tender) Limekilns (19/2/19), N. Queensferry (12/8/19), Bridges (09/3/20), Pittenweem(15.11.20),

	Marine Pollution (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	(Mo	red at level st Lil	kely)		Risk scored at Residual level (Worst Credible)					k Score
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard Risk
1.1	Loss of Containment (oil product)	Human Error Technical Failure	FTNS Bunkering Procedure Byelaws & General Directions Pilotage 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	5	5	1	3	5	5	5	4.75

Most Likely: Minor pollution consisting of a light product which has no adverse effects on the marine environment and dissipates naturally

Worst Credible: Major widespread pollution consisting of a heavy product which results in extensive adverse effects to the marine environment/wildlife requiring significant resources

Content Reviewed	Changes Made
MRF's relating to the RA	Risk Score Adjusted
All Hazards	
All Risk controls	
All Likelyhoods	
All Risk Scores	

		Risk Assessment Team / Date CHM, MM, DMM, HMD / 12th August 2015
Risk Assessment - Marine Pollution	Review Due	Revised By / Date
(Tidal Waters)	Jul-26	July 2024, MMT

	Marine Pollution (Enclosed Dock)										01/2021 (Oil Sheen) 03/2021 (Oil Sheen) 04/2021 (Black Soot)06/2021 (Oil Sheen) Leith (19/2/19) (1/9/19), (07.04.20), (21.10.20) (27.1.21) Gmth - (17.6.20), (21.7.20), (9.12.20), (15.1.21)(16.3.21) Burntisland - (271.21)					
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Risk scored at Residual level (Most Likely)		level level						le	evel		Score	
	(Event leading to a consequence)	3	(What action & how frequent)			Over	all Ris	sk		0	verall R	isk	Sisk 9			
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property Environment	Business	Hazard R			
1.1	Loss of Containment (oil product)	Human Error 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	5 5	5	5	Most Likely: Small scale pollution consisting of a light product which is contained within a dock and dissipates naturally Worst Credible: Major pollution consisting of a heavy product which cannot be contained with the docl and results in extensive damage to the marine environment requiring extensive resources to tackle		

Content Reviewed	Changes Made
MRF's relating to the RA All Hazards All Risk controls All Likelyhoods All Risk Scores	Causes updated to match with standard causes in definitions

FORTH PORTS LIMITED		Risk Assessment Team / Date CHM, MM, DMM, HMD / 12th August 2015
Risk Assessment - Marine Pollution	Review Due	Revised By / Date
(Encolsed Docks)	Jul-26	July 2024, MMT

POLREPS - 01-2023 (Diesel spill) 02-2023 (Hydraulic pipe spill) 03-2023 (Oil sheen) 06-2023 (Oil sheen) 10-2023 (Oil sheen) 14-2023 (Oil sheen) 17-2023 (Oil sheen) 17-2023 (Oil sheen) 17-2023 (Oil sheen) 10-2024 (Oil sheen large) 02-2024 (Oil sheen) 04-2024 (Run-off sheen)