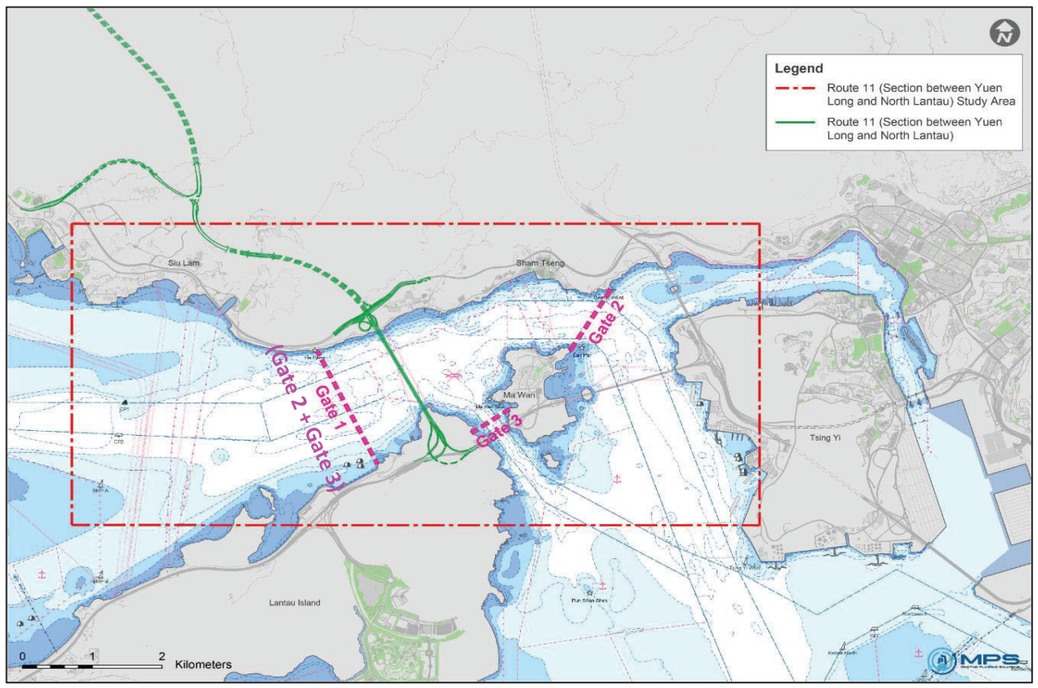
Annex I
Marine Emission Rate for Tsing Lung Tau Fairway in Year 2048
Small Craft - Work Boat and Tugboat_Gate 2

Marine Traffic Information

Assessment Year 2048

Assessed Vessel Type Small Craft - Work Boat and Tugboat

Gate 2



Marine Traffic Information from Marine Traffic Consultants

Location	Monthly Vessel Count in Dec [1]	Travelling Speed (knots) [2]	Length of Sailing Route (m) [3]
Gate 2	9,225	5	2,900

Notes:

[1] Monthly Vessel Count is advised by Marine Traffic Consultant and accepted by Marine Department.

[2] Average speed of 5 knot is provided by Marine Traffic Consultant.

[3] Possible maximum length of sailing route is estimated for conservative assessment.

[4] As advised by Marine Traffic Consultant, the workboats refer to small cargo junk and tugboats refers to those with size less than 20m.

Marine Emission Inventory

Total Emission Rate

Group [1]	Vessel Type [2]	Emission Rate per Trip (g/s) [3]		
		NO_X	RSP	FSP
1	Work Boat	0.107	0.004	0.004
2	Tugboat	0.228	0.012	0.012

Engine in Operation

Engine	On (1) or Off (0) [4]
ME	1
AE	1

Notes:

[1] The vessel type is grouped according to the modelling parameter (i.e. stack height, exit temperature, exit velocity etc). Vessel types with the identical modelling parameters will be grouped.

[2] Marine traffic consultant advised the small craft is composed of pleasure vessel, sampan, work boat and tugboat.

[3] The emission rate per trip is calculated based on the following equation. Breakdown is provided and documented in "Technical Notes on Marine Emission for So Kwun Wat and Tsing Lung Tau Areas" submitted to EPD and emission rates are evenly apportioned into point sources in the model as shown in subsequent pages of this Appendix.

Engine Emission Rate per Trip = (i)Time-in-mode x (ii)Engine Load Factors x (iii) Engine Power x (iv) Emission Factor, where

(i) Time-in-mode is calculated from the average speed and possible maximum length of sailing route within assessment area provided by Marine Traffic Consultant.

(ii) Engine Load Factors are made reference to Table 4-7, Table 4-10 and Table 3-24 of Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012).

(iii) The engine powers are made reference to Table 4-5 and Table 4-6 of Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012) - cargo junk of GRT 0-499 class and tug of GRT 0-499 (average of Grade II tug boat of locally licensed vessel).

(iv) The emission factor is made reference to Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012) Table 4-16. Under the Air Pollution Control (Fuel for Vessels) Regulation, all vessels assumed to use MGO due to requirement to fuel switch to compliant fuel (sulphur content <=0.5%) within Hong Kong waters.

[4] Main and auxiliary engine are assumed in operation during maneuvering for conservative assessment with reference to Table 3-25 of Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012). The emission rate per trip considers the emission from the engine in operation as indicated in the table "Engine in Operation", and the calculation is documented in the "Technical Notes on Marine Emission for So Kwun Wat and Tsing Lung Tau Areas" submitted to EPD.

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
2	1	G2_TW1_001	POINT	822568.9	824550.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_002	POINT	822519.8	824539.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_003	POINT	822470.7	824529.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_004	POINT	822421.6	824518.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_005	POINT	822372.5	824508	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_006	POINT	822323.4	824497.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_007	POINT	822283.4	824467.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_008	POINT	822246.1	824431.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_009	POINT	822208.9	824395.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_010	POINT	822171.6	824359.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_011	POINT	822133.1	824325.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_012	POINT	822085.1	824310.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_013	POINT	822037	824295.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_014	POINT	821988.9	824280.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_015	POINT	821940.9	824265.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_016	POINT	821892.8	824250.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_017	POINT	821844.7	824235.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_018	POINT	821796.7	824219.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_019	POINT	821748.6	824204.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_020	POINT	821700.5	824189.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_021	POINT	821652.5	824174.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_022	POINT	821604.4	824159.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_023	POINT	821556.3	824144.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_024	POINT	821508.3	824129.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_025	POINT	821460.2	824114.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_026	POINT	821412.1	824098.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_027	POINT	821364.1	824083.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_028	POINT	821316	824068.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_029	POINT	821268	824053.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_030	POINT	821219.9	824038.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_031	POINT	821171.8	824023.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_032	POINT	821122.7	824013.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_033	POINT	821072.9	824008.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_034	POINT	821023.1	824003.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_035	POINT	820973.2	823997.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_036	POINT	823115.8	824291.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_037	POINT	823074.4	824261.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_038	POINT	823032.9	824230.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_039	POINT	822991.4	824200.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_040	POINT	822950	824170.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_041	POINT	822908.5	824140.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_042	POINT	822867.1	824110.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_043	POINT	822825.6	824079.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_044	POINT	822784.1	824049.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
2	1	G2_TW1_045	POINT	822742.7	824019.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_046	POINT	822701.2	823989.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_047	POINT	822659.7	823959.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_048	POINT	822618.3	823928.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_049	POINT	822576.8	823898.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_050	POINT	822535	823869.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_051	POINT	822492.2	823841.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_052	POINT	822449.4	823813.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_053	POINT	822406.6	823785.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_054	POINT	822363.8	823757.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_055	POINT	822321	823729.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_056	POINT	822278.2	823701.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_057	POINT	822235.4	823673.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_058	POINT	822192.6	823645.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_059	POINT	822149.8	823617.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_060	POINT	822107	823589.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_061	POINT	822064.2	823561.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_062	POINT	822021.4	823533.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_063	POINT	821978.6	823505.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_064	POINT	821935.8	823477.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_065	POINT	821893	823449.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_066	POINT	821850.2	823421.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_067	POINT	821807.4	823393.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_068	POINT	821764.6	823365.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_069	POINT	821721.8	823337.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_070	POINT	821679	823309.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_071	POINT	821636.2	823281.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_072	POINT	821593.4	823253.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_073	POINT	821550.6	823226	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_074	POINT	821507.8	823198	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_075	POINT	821465	823170.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_076	POINT	821422.2	823142.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_077	POINT	821379.4	823114.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_078	POINT	821336.6	823086.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_079	POINT	821293.8	823058.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_080	POINT	821251	823030.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_081	POINT	821208.2	823002.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_082	POINT	821165.3	822974.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_083	POINT	821122.5	822946.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_084	POINT	821580.3	822021.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_085	POINT	821624.6	822046.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_086	POINT	821668.9	822071.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_087	POINT	821713.2	822096.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_088	POINT	821757.5	822121.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
2	1	G2_TW1_089	POINT	821801.8	822146.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_090	POINT	821846.1	822171.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_091	POINT	821867.4	822220	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_092	POINT	821887.8	822269.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_093	POINT	821908.3	822318.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_094	POINT	821928.7	822367.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_095	POINT	821954.5	822412.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_096	POINT	821988.4	822452.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_097	POINT	822022.2	822492.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_098	POINT	822056.1	822531.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_099	POINT	822090	822571.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_100	POINT	822123.8	822611.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_101	POINT	822161.2	822647	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_102	POINT	822199.1	822682.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_103	POINT	822237.1	822717.3	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_104	POINT	822275	822752.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_105	POINT	822313	822787.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_106	POINT	822350.9	822822.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_107	POINT	822389	822857.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_108	POINT	822427.1	822892.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_109	POINT	822465.2	822927.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_110	POINT	822503.3	822962.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_111	POINT	822541.4	822997.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_112	POINT	822579.4	823032.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_113	POINT	822608.5	823075.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_114	POINT	822632.4	823122.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_115	POINT	822656.3	823170	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_116	POINT	822682.9	823214.9	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_117	POINT	822722	823248.5	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_118	POINT	822761.2	823282.1	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_119	POINT	822800.3	823315.7	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_120	POINT	822839.4	823349.2	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_121	POINT	822878.6	823382.8	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_122	POINT	822917.7	823416.4	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_123	POINT	822956.9	823450	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_124	POINT	822996	823483.6	0	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_125	POINT	823035.2	823517.2	1	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_126	POINT	823074.3	823550.8	2	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_127	POINT	823113.5	823584.4	3	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	1	G2_TW1_128	POINT	823152.6	823617.9	4	11	588	8	0.2	8.39E-04	2.85E-05	2.77E-05
2	2	G2_TW2_001	POINTHOR	822568.9	824550.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_002	POINTHOR	822519.8	824539.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_003	POINTHOR	822470.7	824529.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_004	POINTHOR	822421.6	824518.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
2	2	G2_TW2_005	POINTHOR	822372.5	824508	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_006	POINTHOR	822323.4	824497.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_007	POINTHOR	822283.4	824467.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_008	POINTHOR	822246.1	824431.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_009	POINTHOR	822208.9	824395.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_010	POINTHOR	822171.6	824359.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_011	POINTHOR	822133.1	824325.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_012	POINTHOR	822085.1	824310.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_013	POINTHOR	822037	824295.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_014	POINTHOR	821988.9	824280.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_015	POINTHOR	821940.9	824265.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_016	POINTHOR	821892.8	824250.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_017	POINTHOR	821844.7	824235.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_018	POINTHOR	821796.7	824219.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_019	POINTHOR	821748.6	824204.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_020	POINTHOR	821700.5	824189.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_021	POINTHOR	821652.5	824174.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_022	POINTHOR	821604.4	824159.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_023	POINTHOR	821556.3	824144.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_024	POINTHOR	821508.3	824129.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_025	POINTHOR	821460.2	824114.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_026	POINTHOR	821412.1	824098.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_027	POINTHOR	821364.1	824083.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_028	POINTHOR	821316	824068.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_029	POINTHOR	821268	824053.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_030	POINTHOR	821219.9	824038.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_031	POINTHOR	821171.8	824023.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_032	POINTHOR	821122.7	824013.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_033	POINTHOR	821072.9	824008.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_034	POINTHOR	821023.1	824003.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_035	POINTHOR	820973.2	823997.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_036	POINTHOR	823115.8	824291.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_037	POINTHOR	823074.4	824261.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_038	POINTHOR	823032.9	824230.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_039	POINTHOR	822991.4	824200.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_040	POINTHOR	822950	824170.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_041	POINTHOR	822908.5	824140.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_042	POINTHOR	822867.1	824110.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_043	POINTHOR	822825.6	824079.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_044	POINTHOR	822784.1	824049.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_045	POINTHOR	822742.7	824019.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_046	POINTHOR	822701.2	823989.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_047	POINTHOR	822659.7	823959.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_048	POINTHOR	822618.3	823928.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
2	2	G2_TW2_049	POINTHOR	822576.8	823898.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_050	POINTHOR	822535	823869.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_051	POINTHOR	822492.2	823841.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_052	POINTHOR	822449.4	823813.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_053	POINTHOR	822406.6	823785.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_054	POINTHOR	822363.8	823757.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_055	POINTHOR	822321	823729.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_056	POINTHOR	822278.2	823701.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_057	POINTHOR	822235.4	823673.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_058	POINTHOR	822192.6	823645.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_059	POINTHOR	822149.8	823617.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_060	POINTHOR	822107	823589.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_061	POINTHOR	822064.2	823561.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_062	POINTHOR	822021.4	823533.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_063	POINTHOR	821978.6	823505.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_064	POINTHOR	821935.8	823477.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_065	POINTHOR	821893	823449.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_066	POINTHOR	821850.2	823421.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_067	POINTHOR	821807.4	823393.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_068	POINTHOR	821764.6	823365.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_069	POINTHOR	821721.8	823337.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_070	POINTHOR	821679	823309.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_071	POINTHOR	821636.2	823281.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_072	POINTHOR	821593.4	823253.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_073	POINTHOR	821550.6	823226	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_074	POINTHOR	821507.8	823198	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_075	POINTHOR	821465	823170.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_076	POINTHOR	821422.2	823142.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_077	POINTHOR	821379.4	823114.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_078	POINTHOR	821336.6	823086.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_079	POINTHOR	821293.8	823058.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_080	POINTHOR	821251	823030.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_081	POINTHOR	821208.2	823002.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_082	POINTHOR	821165.3	822974.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_083	POINTHOR	821122.5	822946.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_084	POINTHOR	821580.3	822021.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_085	POINTHOR	821624.6	822046.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_086	POINTHOR	821668.9	822071.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_087	POINTHOR	821713.2	822096.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_088	POINTHOR	821757.5	822121.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_089	POINTHOR	821801.8	822146.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_090	POINTHOR	821846.1	822171.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_091	POINTHOR	821867.4	822220	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_092	POINTHOR	821887.8	822269.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
2	2	G2_TW2_093	POINTHOR	821908.3	822318.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_094	POINTHOR	821928.7	822367.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_095	POINTHOR	821954.5	822412.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_096	POINTHOR	821988.4	822452.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_097	POINTHOR	822022.2	822492.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_098	POINTHOR	822056.1	822531.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_099	POINTHOR	822090	822571.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_100	POINTHOR	822123.8	822611.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_101	POINTHOR	822161.2	822647	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_102	POINTHOR	822199.1	822682.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_103	POINTHOR	822237.1	822717.3	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_104	POINTHOR	822275	822752.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_105	POINTHOR	822313	822787.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_106	POINTHOR	822350.9	822822.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_107	POINTHOR	822389	822857.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_108	POINTHOR	822427.1	822892.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_109	POINTHOR	822465.2	822927.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_110	POINTHOR	822503.3	822962.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_111	POINTHOR	822541.4	822997.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_112	POINTHOR	822579.4	823032.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_113	POINTHOR	822608.5	823075.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_114	POINTHOR	822632.4	823122.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_115	POINTHOR	822656.3	823170	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_116	POINTHOR	822682.9	823214.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_117	POINTHOR	822722	823248.5	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_118	POINTHOR	822761.2	823282.1	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_119	POINTHOR	822800.3	823315.7	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_120	POINTHOR	822839.4	823349.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_121	POINTHOR	822878.6	823382.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_122	POINTHOR	822917.7	823416.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_123	POINTHOR	822956.9	823450	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_124	POINTHOR	822996	823483.6	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_125	POINTHOR	823035.2	823517.2	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_126	POINTHOR	823074.3	823550.8	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_127	POINTHOR	823113.5	823584.4	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05
2	2	G2_TW2_128	POINTHOR	823152.6	823617.9	0	4	694.7	8	0.3	1.78E-03	9.56E-05	9.30E-05

Notes:

[1] Modelling parameters are referred to Tuen Mun South Extension (AERIAR-236/2022).

Calculation of Multiplying Factor for Total Vessel Count

Monthly Vessel Count for Year 2048

Marine Gate	Monthly Vessel Count in Dec [1]
Gate 2	9,225

Notes:

[1] The marine traffic data for December is provided by Marine Traffic Consultant.

Monthly Profile of Marine Traffic for Year 2019

Month	Monthly Multiplying Factor
Jan-19	1.00
Feb-19	0.90
Mar-19	1.00
Apr-19	0.97
May-19	1.00
Jun-19	0.97
Jul-19	1.00
Aug-19	1.00
Sep-19	0.97
Oct-19	1.00
Nov-19	0.97
Dec-19	**1.00**

Notes:

[1] No monthly profile is available from Marine Traffic Consultant and port statistics. Same number of vessel count each day is assumed.

Hourly Multiplying Factor derived from Marine Traffic in December 2048

Hour		Gate 2	
Start	End	No. of Marine Vessels [1]	Hourly Multplying Factor
0	1	146	1.6%
1	2	135	1.5%
2	3	182	2.0%
3	4	145	1.6%
4	5	174	1.9%
5	6	261	2.8%
6	7	495	5.4%
7	8	521	5.6%
8	9	618	6.7%
9	10	525	5.7%
10	11	500	5.4%
11	12	572	6.2%
12	13	436	4.7%
13	14	502	5.4%
14	15	556	6.0%
15	16	542	5.9%
16	17	673	7.3%
17	18	582	6.3%
18	19	415	4.5%
19	20	328	3.6%
20	21	287	3.1%
21	22	237	2.6%
22	23	221	2.4%
23	24	172	1.9%

Notes:

[1] The number of hourly marine vessels for Dec 2048 is provided by Marine Traffic Consultant. It contains the total number of marine vessels for the 31 days in December in Year 2048 for each hour. For example, from Hour 0 to Hour 1 (i.e. first hour of 1 Dec + first hour of 2 Dec, ... 1st hour of 31 Dec), there are total 146 marine vessels for the first hour during the whole December.

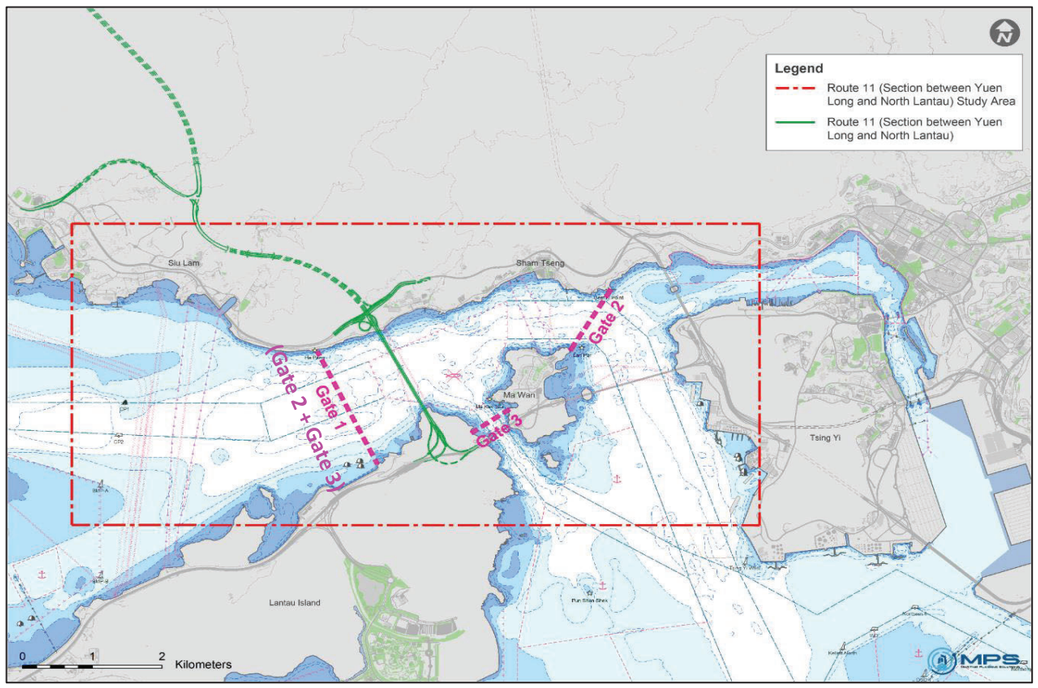
Annex II
Marine Emission Rate for Tsing Lung Tau Fairway in Year 2048
Small Craft - Work Boat and Tugboat_Gate 3

Marine Traffic Information

Assessment Year 2048

Assessed Vessel Type Small Craft - Work Boat and Tugboat

Gate 3



Marine Traffic Information from Marine Traffic Consultants

Location	Monthly Vessel Count in Dec [1]	Travelling Speed (knots) [2]	Length of Sailing Route (m) [3]
Gate 3	2,038	5	3,900

Notes

[1] Monthly Vessel Count is advised by Marine Traffic Consultant and accepted by Marine Department.

[2] Average speed of 5 knot is provided by Marine Traffic Consultant.

[3] Possible maximum length of sailing route is estimated for conservative assessment.

[4] As advised by Marine Traffic Consultant, the workboats refer to small cargo junk and tugboats refers to those with size less than 20m.

Marine Emission Inventory

Total Emission Rate

Group [1]	Vessel Type [2]	Emission Rate per Trip (g/s) [3]		
		NO_X	RSP	FSP
1	Work Boat	0.144	0.005	0.005
2	Tugboat	0.306	0.016	0.016

Engine in Operation

Engine	On (1) or Off (0) [4]
ME	1
AE	1

Notes:

[1] The vessel type is grouped according to the modelling parameter (i.e. stack height, exit temperature, exit velocity etc). Vessel types with the identical modelling parameters will be grouped.

[2] Marine traffic consultant advised the small craft is composed of pleasure vessel, sampan, work boat and tugboat.

[3] The emission rate per trip is calculated based on the following equation. Breakdown is provided and documented in "Technical Notes on Marine Emission for So Kwun Wat and Tsing Lung Tau Areas" submitted to EPD and emission rates are evenly apportioned into point sources in the model as shown in subsequent pages of this Appendix.

Engine Emission Rate per Trip = (i)Time-in-mode x (ii)Engine Load Factors x (iii) Engine Power x (iv) Emission Factor, where

(i) Time-in-mode is calculated from the average speed and possible maximum length of sailing route within assessment area provided by Marine Traffic Consultant.

(ii) Engine Load Factors are made reference to Table 4-7, Table 4-10 and Table 3-24 of Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012).

(iii) The engine powers are made reference to Table 4-5 and Table 4-6 of Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012) - cargo junk of GRT 0-499 class and tug of GRT 0-499 (average of Grade II tug boat of locally licensed vessel).

(iv) The emission factor is made reference to Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012) Table 4-16. Under the Air Pollution Control (Fuel for Vessels) Regulation, all vessels assumed to use MGO due to requirement to fuel switch to compliant fuel (sulphur content <=0.5%) within Hong Kong waters.

[4] Main and auxiliary engine are assumed in operation during maneuvering for conservative assessment with reference to Table 3-25 of Study on Marine Vessels Emission Inventory Final Report (HKUST, February 2012). The emission rate per trip considers the emission from the engine in operation as indicated in the table "Engine in Operation", and the calculation is documented in the "Technical Notes on Marine Emission for So Kwun Wat and Tsing Lung Tau Areas" submitted to EPD.

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	1	G3_TW1_001	POINT	824152.7	822444.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_002	POINT	824126.3	822490.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_003	POINT	824100	822536.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_004	POINT	824073.7	822582.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_005	POINT	824047.4	822628	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_006	POINT	824021	822673.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_007	POINT	823994.7	822719.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_008	POINT	823968.4	822765.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_009	POINT	823942	822811.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_010	POINT	823912	822854.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_011	POINT	823880	822895.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_012	POINT	823848	822936.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_013	POINT	823816	822978.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_014	POINT	823784	823019.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_015	POINT	823752	823061.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_016	POINT	823720	823102.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_017	POINT	823690	823145.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_018	POINT	823661.4	823189.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_019	POINT	823632.7	823233.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_020	POINT	823604	823278	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_021	POINT	823575.3	823322.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_022	POINT	823546.6	823366.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_023	POINT	823517.9	823410.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_024	POINT	823474.6	823434.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_025	POINT	823428.2	823455.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_026	POINT	823381.8	823475.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_027	POINT	823335.4	823495.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_028	POINT	823289.1	823516	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_029	POINT	823242.7	823536.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_030	POINT	823196.3	823556.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_031	POINT	823149.9	823576.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_032	POINT	823103.5	823597.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_033	POINT	823057.1	823617.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_034	POINT	823010.8	823637.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_035	POINT	822964.4	823658.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_036	POINT	822918	823678.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_037	POINT	822871.6	823698.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_038	POINT	822825.2	823719	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_039	POINT	822778.8	823739.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_040	POINT	822732.5	823759.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_041	POINT	822686.1	823779.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_042	POINT	822639.7	823800.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_043	POINT	822593.3	823820.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_044	POINT	822546.9	823840.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	1	G3_TW1_045	POINT	822500.6	823861.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_046	POINT	822454.2	823881.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_047	POINT	822405.8	823894.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_048	POINT	822357	823907	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_049	POINT	822308.2	823919	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_050	POINT	822259.4	823931	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_051	POINT	822210.6	823943.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_052	POINT	822161.7	823955.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_053	POINT	822112.9	823967.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_054	POINT	822064	823978.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_055	POINT	822013.9	823978.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_056	POINT	821963.8	823979.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_057	POINT	821913.8	823980.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_058	POINT	821863.7	823981	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_059	POINT	821813.6	823981.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_060	POINT	821763.5	823982.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_061	POINT	821713.5	823983.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_062	POINT	821663.4	823983.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_063	POINT	821613.3	823984.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_064	POINT	821563.2	823985.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_065	POINT	821513.2	823986	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_066	POINT	821463.1	823986.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_067	POINT	821413	823987.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_068	POINT	821362.9	823988.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_069	POINT	821312.9	823988.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_070	POINT	821262.8	823989.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_071	POINT	821212.7	823990.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_072	POINT	821162.6	823991.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_073	POINT	821112.6	823991.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_074	POINT	821062.5	823992.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_075	POINT	821012.4	823993.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_076	POINT	823992	822430.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_077	POINT	823961.5	822472.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_078	POINT	823930.9	822515.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_079	POINT	823900.4	822558.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_080	POINT	823869.9	822600.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_081	POINT	823839.4	822643.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_082	POINT	823808.8	822686.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_083	POINT	823778.3	822728.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_084	POINT	823747.8	822771.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_085	POINT	823717.3	822814.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_086	POINT	823686.7	822857	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_087	POINT	823652.4	822895.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_088	POINT	823613.7	822929.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	1	G3_TW1_089	POINT	823575.1	822964.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_090	POINT	823536.4	822998.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_091	POINT	823497.8	823032.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_092	POINT	823459.1	823066.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_093	POINT	823420.5	823101.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_094	POINT	823381.8	823135.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_095	POINT	823343.1	823169.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_096	POINT	823304.5	823203.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_097	POINT	823265.8	823238	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_098	POINT	823227.2	823272.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_099	POINT	823188.5	823306.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_100	POINT	823147.1	823335.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_101	POINT	823100.2	823354.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_102	POINT	823053.3	823373.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_103	POINT	823006.5	823392.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_104	POINT	822959.6	823411.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_105	POINT	822912.7	823430.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_106	POINT	822865.9	823449.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_107	POINT	822819	823468.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_108	POINT	822772.1	823487.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_109	POINT	822724.4	823501.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_110	POINT	822674.3	823503.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_111	POINT	822624.3	823505.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_112	POINT	822574.2	823507.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_113	POINT	822524.2	823509.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_114	POINT	822474.1	823511	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_115	POINT	822424.1	823512.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_116	POINT	822374	823514.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_117	POINT	822324	823516.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_118	POINT	822273.9	823518.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_119	POINT	822223.9	823520.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_120	POINT	822175.3	823511.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_121	POINT	822128	823493.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_122	POINT	822080.6	823476.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_123	POINT	822033.3	823458.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_124	POINT	821985.9	823441.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_125	POINT	821938.6	823423.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_126	POINT	821891.2	823406.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_127	POINT	821843.9	823388.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_128	POINT	821796.5	823371.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_129	POINT	821749.2	823353.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_130	POINT	821701.8	823336	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_131	POINT	821654.5	823318.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_132	POINT	821607.1	823300.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	1	G3_TW1_133	POINT	821559.8	823283.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_134	POINT	821512.4	823265.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_135	POINT	821465.1	823248.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_136	POINT	821417.7	823230.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_137	POINT	821370.4	823213.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_138	POINT	821323	823195.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_139	POINT	821275.7	823178	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_140	POINT	821228.3	823160.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_141	POINT	821181	823142.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_142	POINT	821133.6	823125.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_143	POINT	823786.1	822441.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_144	POINT	823760.5	822487.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_145	POINT	823734.9	822534.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_146	POINT	823709.3	822580.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_147	POINT	823683.6	822626.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_148	POINT	823658	822673	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_149	POINT	823626.6	822714.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_150	POINT	823590.3	822751.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_151	POINT	823554	822788.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_152	POINT	823517.7	822825.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_153	POINT	823481.4	822862.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_154	POINT	823443.5	822897.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_155	POINT	823404.3	822931.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_156	POINT	823365	822964.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_157	POINT	823325.8	822998.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_158	POINT	823286.6	823031.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_159	POINT	823247.3	823065	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_160	POINT	823205.9	823094.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_161	POINT	823158.6	823111.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_162	POINT	823111.2	823129.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_163	POINT	823063.9	823146.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_164	POINT	823016.5	823164.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_165	POINT	822969.2	823181.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_166	POINT	822921.8	823199.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_167	POINT	822874.5	823217	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_168	POINT	822827.1	823234.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_169	POINT	822779.8	823252.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_170	POINT	822733.4	823253.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_171	POINT	822688.5	823229.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_172	POINT	822643.7	823206	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_173	POINT	822598.8	823182.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_174	POINT	822553.9	823158.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_175	POINT	822509	823134.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_176	POINT	822464.2	823110.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	1	G3_TW1_177	POINT	822419.3	823086.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_178	POINT	822374.4	823062.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_179	POINT	822329.6	823038.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_180	POINT	822284.7	823014.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_181	POINT	822239.8	822990.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_182	POINT	822194.9	822966.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_183	POINT	822150.1	822942.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_184	POINT	822105.2	822919	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_185	POINT	822060.3	822895.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_186	POINT	822015.4	822871.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_187	POINT	821970.6	822847.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_188	POINT	821925.7	822823.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_189	POINT	821880.8	822799.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_190	POINT	821835.9	822775.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_191	POINT	821791.1	822751.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_192	POINT	821746.2	822727.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_193	POINT	821701.3	822703.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_194	POINT	821656.4	822679.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_195	POINT	821611.6	822655.9	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_196	POINT	821566.7	822632	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_197	POINT	821521.8	822608.1	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_198	POINT	821476.9	822584.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_199	POINT	821432.1	822560.2	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_200	POINT	821387.2	822536.3	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_201	POINT	821342.3	822512.4	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_202	POINT	821297.4	822488.5	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_203	POINT	821252.6	822464.6	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_204	POINT	821207.7	822440.7	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	1	G3_TW1_205	POINT	821162.8	822416.8	0	11	588	8	0.2	7.04E-04	2.40E-05	2.33E-05
3	2	G3_TW2_001	POINTHOR	824152.7	822444.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_002	POINTHOR	824126.3	822490.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_003	POINTHOR	824100	822536.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_004	POINTHOR	824073.7	822582.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_005	POINTHOR	824047.4	822628	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_006	POINTHOR	824021	822673.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_007	POINTHOR	823994.7	822719.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_008	POINTHOR	823968.4	822765.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_009	POINTHOR	823942	822811.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_010	POINTHOR	823912	822854.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_011	POINTHOR	823880	822895.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_012	POINTHOR	823848	822936.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_013	POINTHOR	823816	822978.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_014	POINTHOR	823784	823019.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_015	POINTHOR	823752	823061.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	2	G3_TW2_016	POINTHOR	823720	823102.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_017	POINTHOR	823690	823145.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_018	POINTHOR	823661.4	823189.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_019	POINTHOR	823632.7	823233.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_020	POINTHOR	823604	823278	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_021	POINTHOR	823575.3	823322.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_022	POINTHOR	823546.6	823366.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_023	POINTHOR	823517.9	823410.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_024	POINTHOR	823474.6	823434.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_025	POINTHOR	823428.2	823455.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_026	POINTHOR	823381.8	823475.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_027	POINTHOR	823335.4	823495.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_028	POINTHOR	823289.1	823516	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_029	POINTHOR	823242.7	823536.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_030	POINTHOR	823196.3	823556.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_031	POINTHOR	823149.9	823576.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_032	POINTHOR	823103.5	823597.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_033	POINTHOR	823057.1	823617.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_034	POINTHOR	823010.8	823637.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_035	POINTHOR	822964.4	823658.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_036	POINTHOR	822918	823678.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_037	POINTHOR	822871.6	823698.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_038	POINTHOR	822825.2	823719	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_039	POINTHOR	822778.8	823739.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_040	POINTHOR	822732.5	823759.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_041	POINTHOR	822686.1	823779.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_042	POINTHOR	822639.7	823800.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_043	POINTHOR	822593.3	823820.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_044	POINTHOR	822546.9	823840.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_045	POINTHOR	822500.6	823861.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_046	POINTHOR	822454.2	823881.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_047	POINTHOR	822405.8	823894.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_048	POINTHOR	822357	823907	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_049	POINTHOR	822308.2	823919	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_050	POINTHOR	822259.4	823931	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_051	POINTHOR	822210.6	823943.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_052	POINTHOR	822161.7	823955.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_053	POINTHOR	822112.9	823967.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_054	POINTHOR	822064	823978.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_055	POINTHOR	822013.9	823978.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_056	POINTHOR	821963.8	823979.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_057	POINTHOR	821913.8	823980.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_058	POINTHOR	821863.7	823981	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_059	POINTHOR	821813.6	823981.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	2	G3_TW2_060	POINTHOR	821763.5	823982.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_061	POINTHOR	821713.5	823983.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_062	POINTHOR	821663.4	823983.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_063	POINTHOR	821613.3	823984.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_064	POINTHOR	821563.2	823985.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_065	POINTHOR	821513.2	823986	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_066	POINTHOR	821463.1	823986.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_067	POINTHOR	821413	823987.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_068	POINTHOR	821362.9	823988.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_069	POINTHOR	821312.9	823988.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_070	POINTHOR	821262.8	823989.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_071	POINTHOR	821212.7	823990.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_072	POINTHOR	821162.6	823991.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_073	POINTHOR	821112.6	823991.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_074	POINTHOR	821062.5	823992.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_075	POINTHOR	821012.4	823993.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_076	POINTHOR	823992	822430.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_077	POINTHOR	823961.5	822472.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_078	POINTHOR	823930.9	822515.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_079	POINTHOR	823900.4	822558.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_080	POINTHOR	823869.9	822600.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_081	POINTHOR	823839.4	822643.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_082	POINTHOR	823808.8	822686.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_083	POINTHOR	823778.3	822728.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_084	POINTHOR	823747.8	822771.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_085	POINTHOR	823717.3	822814.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_086	POINTHOR	823686.7	822857	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_087	POINTHOR	823652.4	822895.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_088	POINTHOR	823613.7	822929.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_089	POINTHOR	823575.1	822964.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_090	POINTHOR	823536.4	822998.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_091	POINTHOR	823497.8	823032.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_092	POINTHOR	823459.1	823066.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_093	POINTHOR	823420.5	823101.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_094	POINTHOR	823381.8	823135.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_095	POINTHOR	823343.1	823169.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_096	POINTHOR	823304.5	823203.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_097	POINTHOR	823265.8	823238	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_098	POINTHOR	823227.2	823272.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_099	POINTHOR	823188.5	823306.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_100	POINTHOR	823147.1	823335.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_101	POINTHOR	823100.2	823354.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_102	POINTHOR	823053.3	823373.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_103	POINTHOR	823006.5	823392.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	2	G3_TW2_104	POINTHOR	822959.6	823411.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_105	POINTHOR	822912.7	823430.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_106	POINTHOR	822865.9	823449.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_107	POINTHOR	822819	823468.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_108	POINTHOR	822772.1	823487.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_109	POINTHOR	822724.4	823501.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_110	POINTHOR	822674.3	823503.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_111	POINTHOR	822624.3	823505.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_112	POINTHOR	822574.2	823507.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_113	POINTHOR	822524.2	823509.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_114	POINTHOR	822474.1	823511	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_115	POINTHOR	822424.1	823512.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_116	POINTHOR	822374	823514.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_117	POINTHOR	822324	823516.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_118	POINTHOR	822273.9	823518.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_119	POINTHOR	822223.9	823520.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_120	POINTHOR	822175.3	823511.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_121	POINTHOR	822128	823493.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_122	POINTHOR	822080.6	823476.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_123	POINTHOR	822033.3	823458.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_124	POINTHOR	821985.9	823441.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_125	POINTHOR	821938.6	823423.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_126	POINTHOR	821891.2	823406.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_127	POINTHOR	821843.9	823388.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_128	POINTHOR	821796.5	823371.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_129	POINTHOR	821749.2	823353.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_130	POINTHOR	821701.8	823336	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_131	POINTHOR	821654.5	823318.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_132	POINTHOR	821607.1	823300.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_133	POINTHOR	821559.8	823283.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_134	POINTHOR	821512.4	823265.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_135	POINTHOR	821465.1	823248.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_136	POINTHOR	821417.7	823230.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_137	POINTHOR	821370.4	823213.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_138	POINTHOR	821323	823195.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_139	POINTHOR	821275.7	823178	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_140	POINTHOR	821228.3	823160.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_141	POINTHOR	821181	823142.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_142	POINTHOR	821133.6	823125.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_143	POINTHOR	823786.1	822441.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_144	POINTHOR	823760.5	822487.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_145	POINTHOR	823734.9	822534.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_146	POINTHOR	823709.3	822580.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_147	POINTHOR	823683.6	822626.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	2	G3_TW2_148	POINTHOR	823658	822673	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_149	POINTHOR	823626.6	822714.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_150	POINTHOR	823590.3	822751.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_151	POINTHOR	823554	822788.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_152	POINTHOR	823517.7	822825.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_153	POINTHOR	823481.4	822862.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_154	POINTHOR	823443.5	822897.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_155	POINTHOR	823404.3	822931.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_156	POINTHOR	823365	822964.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_157	POINTHOR	823325.8	822998.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_158	POINTHOR	823286.6	823031.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_159	POINTHOR	823247.3	823065	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_160	POINTHOR	823205.9	823094.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_161	POINTHOR	823158.6	823111.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_162	POINTHOR	823111.2	823129.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_163	POINTHOR	823063.9	823146.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_164	POINTHOR	823016.5	823164.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_165	POINTHOR	822969.2	823181.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_166	POINTHOR	822921.8	823199.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_167	POINTHOR	822874.5	823217	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_168	POINTHOR	822827.1	823234.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_169	POINTHOR	822779.8	823252.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_170	POINTHOR	822733.4	823253.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_171	POINTHOR	822688.5	823229.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_172	POINTHOR	822643.7	823206	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_173	POINTHOR	822598.8	823182.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_174	POINTHOR	822553.9	823158.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_175	POINTHOR	822509	823134.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_176	POINTHOR	822464.2	823110.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_177	POINTHOR	822419.3	823086.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_178	POINTHOR	822374.4	823062.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_179	POINTHOR	822329.6	823038.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_180	POINTHOR	822284.7	823014.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_181	POINTHOR	822239.8	822990.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_182	POINTHOR	822194.9	822966.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_183	POINTHOR	822150.1	822942.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_184	POINTHOR	822105.2	822919	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_185	POINTHOR	822060.3	822895.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_186	POINTHOR	822015.4	822871.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_187	POINTHOR	821970.6	822847.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_188	POINTHOR	821925.7	822823.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_189	POINTHOR	821880.8	822799.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_190	POINTHOR	821835.9	822775.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_191	POINTHOR	821791.1	822751.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05

Modelling Parameters

Gate	Group	Source ID	Type	X	Y	Base Elevation	Release Height [1]	Exit Temperature [1]	Exit velocity [1]	Internal diameter [1]	Emission Rate per Trip		
											NOx	RSP	FSP
				(m)	(m)	(mpd)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)	(g/s)
3	2	G3_TW2_192	POINTHOR	821746.2	822727.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_193	POINTHOR	821701.3	822703.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_194	POINTHOR	821656.4	822679.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_195	POINTHOR	821611.6	822655.9	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_196	POINTHOR	821566.7	822632	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_197	POINTHOR	821521.8	822608.1	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_198	POINTHOR	821476.9	822584.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_199	POINTHOR	821432.1	822560.2	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_200	POINTHOR	821387.2	822536.3	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_201	POINTHOR	821342.3	822512.4	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_202	POINTHOR	821297.4	822488.5	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_203	POINTHOR	821252.6	822464.6	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_204	POINTHOR	821207.7	822440.7	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05
3	2	G3_TW2_205	POINTHOR	821162.8	822416.8	0	4	694.7	8	0.3	1.49E-03	8.03E-05	7.81E-05

Notes:

[1] Modelling parameters are referred to Tuen Mun South Extension (AERIAR-236/2022).

Calculation of Multiplying Factor for Total Vessel Count

Monthly Vessel Count for Year 2048

Marine Gate	Monthly Vessel Count in Dec [1]
Gate 3	2,038

Notes:

[1] The marine traffic data for December is provided by Marine Traffic Consultant.

Monthly Profile of Marine Traffic for Year 2019

Month	Monthly Multiplying Factor
Jan-19	1.00
Feb-19	0.90
Mar-19	1.00
Apr-19	0.97
May-19	1.00
Jun-19	0.97
Jul-19	1.00
Aug-19	1.00
Sep-19	0.97
Oct-19	1.00
Nov-19	0.97
Dec-19	**1.00**

Notes:

[1] No monthly profile is available from Marine Traffic Consultant and port statistics. Same number of vessel count each day is assumed.

Hourly Multiplying Factor derived from Marine Traffic in December 2048

Hour		Gate 3	
Start	End	No. of Marine Vessels [1]	Hourly Multplying Factor
0	1	22	1.1%
1	2	17	0.8%
2	3	19	0.9%
3	4	29	1.4%
4	5	37	1.8%
5	6	64	3.1%
6	7	99	4.9%
7	8	91	4.5%
8	9	94	4.6%
9	10	117	5.7%
10	11	166	8.1%
11	12	120	5.9%
12	13	135	6.6%
13	14	98	4.8%
14	15	130	6.4%
15	16	180	8.8%
16	17	212	10.4%
17	18	154	7.6%
18	19	77	3.8%
19	20	53	2.6%
20	21	50	2.5%
21	22	29	1.4%
22	23	15	0.7%
23	24	31	1.5%

Notes:

[1] The number of hourly marine vessels for Dec 2048 is provided by Marine Traffic Consultant. It contains the total number of marine vessels for the 31 days in December in Year 2048 for each hour. For example, from Hour 0 to Hour 1 (i.e. first hour of 1 Dec + first hour of 2 Dec, ... 1st hour of 31 Dec), there are total 22 marine vessels for the first hour during the whole December.

Legend

- Gate 2 TW Modelled Sources
- Gate 3 TW Modelled Sources
- Project Alignment (Tunnel Section)
- Project Alignment (At-grade and Viaducts)
- Administration Area
- 500m assessment area
- PATH Grid

N

200 100 0 200 400 600 Meters

Notes:
The modelled sources is based on the radar/AIS data provided by Marine Department.

Legend

- Gate 2 TW Modelled Sources
- Project Alignment (Tunnel Section)
- Project Alignment (At-grade and Viaducts)
- Administration Area
- 500m assessment area
- PATH Grid

N

200 100 0 200 400 600 Meters

Notes:
The modelled sources is based on the radar/AIS data provided by Marine Department.

Legend

- Gate 3 TW Modelled Sources
- Project Alignment (Tunnel Section)
- Project Alignment (At-grade and Viaducts)
- Administration Area
- 500m assessment area
- PATH Grid

N

200 100 0 200 400 600 Meters

Notes:
The modelled sources is based on the radar/AIS data provided by Marine Department.