

## Appendix 4J

Ventilation Building and Portal Emission of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT)

**Appendix 4J**

CE 38/2008(HY)

Kai Tak Development - Trunk Road T2 and Infrastructure at South Apron

Investigation, Design and Construction

Ventilation Building and Portal Emission of Tseung Kwan O - Lam Tin Tunnel (TKO-LTT)

No.	X-Coordinate	Y-Coordinate	Base Elevation (m)	Daily NO <sub>x</sub> Emission Rate (g/s)	Stack Height (m)	Stack Temp. (K)	Stack Exit Velocity (m/s)	Stack Diameter (m)	Subject Premises	Daily RSP Emission Rate (g/s)
1	842147.5	818226.4	0	5.6796	8	313	6.00	9.10	Ventilation Building of TKL-LTT at CKL	0.2998

Hourly Profile for Ventilation Building Emissions of the Concurrent Project - TKO-LTT

Hour	V3	
	NOx	RSP
Hour 1	2.2%	1.9%
Hour 2	1.6%	1.4%
Hour 3	1.3%	1.1%
Hour 4	0.9%	0.8%
Hour 5	0.8%	0.7%
Hour 6	1.3%	1.6%
Hour 7	2.9%	3.4%
Hour 8	7.6%	9.0%
Hour 9	7.0%	7.1%
Hour 10	6.4%	5.9%
Hour 11	5.0%	4.4%
Hour 12	4.6%	4.1%
Hour 13	4.8%	5.4%
Hour 14	5.1%	5.5%
Hour 15	4.8%	5.0%
Hour 16	5.2%	5.4%
Hour 17	5.9%	6.5%
Hour 18	6.3%	6.6%
Hour 19	6.3%	6.3%
Hour 20	4.8%	4.5%
Hour 21	3.8%	3.4%
Hour 22	4.0%	3.6%
Hour 23	4.0%	3.5%
Hour 24	3.4%	3.0%

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No.	Portal ID	X-Coordinate	Y-Coordinate	Height (m)	Base Elevation (m)	Vol. Flow (m <sup>3</sup> /s)	Total RSP (g/s)	Total NOx (g/s)	Width (m)	Subject Premises
1	B1	841862.8	818110.7	7.0	0.0	--	0.023	0.434	7	Portal of T2 Eastbound Slip Road
2	C1	841922.6	818178.1	8.0	9.1	--	0.015	0.297	14	Portal of Link 190 & Link 226
3	D1	842141.3	818213.9	8.0	15.2	--	0.011	0.217	9	Portal of Link 191
4	E1	842103.8	818105.5	8.0	0.0	--	0.012	0.239	7	Portal of Link 192
5	G1	842177.8	818183.1	9.5	0.0	--	0.142	2.719	11	Portal of TKO-LTT Westbound
6	H1	841826.6	818070.4	8.0	0.0	--	0.020	0.409	9	Portal of Link 225
7	J1	842377.1	818242.8	9.5	17.5	--	0.058	1.067	7	Portal of TKO-LTT Westbound Slip Road

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**For First 50m Out of the Portal**

No.	Portal ID	Total NOx (g/s)	Total RSP (g/s)	X-Coordinate	Y-Coordinate	Elevation (m)	NOx (g/s) of Each Source	Release Height (m)	Sigma Y	Sigma Z	Number of Volume Source	RSP (g/s) of Each Source
1	B1	0.289	0.015	841862.8	818110.7	0.0	0.0413	3.5	3.26	3.26	7	0.00221
	B2			841869.4	818113.0	0.0	0.0413	3.5	3.26	3.26		
	B3			841876.0	818115.4	0.0	0.0413	3.5	3.26	3.26		
	B4			841882.6	818117.8	0.0	0.0413	3.5	3.26	3.26		
	B5			841889.2	818120.1	0.0	0.0413	3.5	3.26	3.26		
	B6			841895.8	818122.5	0.0	0.0413	3.5	3.26	3.26		
	B7			841902.4	818124.9	0.0	0.0413	3.5	3.26	3.26		
2	C1	0.198	0.010	841922.6	818178.1	9.1	0.0496	4.0	6.51	3.72	4	0.00255
	C2			841936.5	818179.6	9.1	0.0496	4.0	6.51	3.72		
	C3			841950.4	818181.1	9.1	0.0496	4.0	6.51	3.72		
	C4			841964.4	818182.6	9.1	0.0496	4.0	6.51	3.72		
3	D1	0.145	0.007	842141.3	818213.9	15.2	0.0241	4.0	4.19	3.72	6	0.00118
	D2			842132.6	818211.4	15.2	0.0241	4.0	4.19	3.72		
	D3			842124.0	818209.0	15.2	0.0241	4.0	4.19	3.72		
	D4			842117.9	818198.5	15.2	0.0241	4.0	4.19	3.72		
	D5			842109.0	818196.5	15.2	0.0241	4.0	4.19	3.72		
	D6			842100.2	818194.5	15.2	0.0241	4.0	4.19	3.72		
4	E1	0.159	0.008	842103.8	818105.5	0.0	0.0228	4.0	3.26	3.72	7	0.00118
	E2			842097.4	818102.9	0.0	0.0228	4.0	3.26	3.72		
	E3			842090.9	818100.2	0.0	0.0228	4.0	3.26	3.72		
	E4			842084.4	818097.5	0.0	0.0228	4.0	3.26	3.72		
	E5			842078.0	818094.8	0.0	0.0228	4.0	3.26	3.72		
	E6			842071.5	818092.1	0.0	0.0228	4.0	3.26	3.72		
	E7			842065.0	818089.4	0.0	0.0228	4.0	3.26	3.72		
5	G1	1.813	0.095	842177.8	818183.1	0.0	0.3625	4.75	5.12	4.42	5	0.01896
	G2			842169.1	818176.4	0.0	0.3625	4.75	5.12	4.42		
	G3			842160.4	818169.7	0.0	0.3625	4.75	5.12	4.42		
	G4			842151.7	818162.9	0.0	0.3625	4.75	5.12	4.42		
	G5			842143.0	818156.2	0.0	0.3625	4.75	5.12	4.42		
6	H1	0.273	0.014	841826.6	818070.4	0.0	0.0454	4.0	4.19	3.72	6	0.00225
	H2			841835.6	818070.0	0.0	0.0454	4.0	4.19	3.72		
	H3			841844.6	818069.7	0.0	0.0454	4.0	4.19	3.72		
	H4			841853.6	818069.4	0.0	0.0454	4.0	4.19	3.72		
	H5			841862.7	818069.1	0.0	0.0454	4.0	4.19	3.72		
	H6			841871.7	818069.1	0.0	0.0454	4.0	4.19	3.72		
7	J1	0.711	0.038	842377.1	818242.8	17.5	0.1016	4.75	3.26	4.42	7	0.00549
	J2			842372.0	818238.0	17.5	0.1016	4.75	3.26	4.42		
	J3			842366.9	818233.2	17.5	0.1016	4.75	3.26	4.42		
	J4			842361.8	818228.4	17.5	0.1016	4.75	3.26	4.42		
	J5			842356.7	818223.6	17.5	0.1016	4.75	3.26	4.42		
	J6			842351.6	818218.8	17.5	0.1016	4.75	3.26	4.42		
	J7			842346.5	818214.0	17.5	0.1016	4.75	3.26	4.42		

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**For Second 50m Out of the Portal**

No.	Portal ID	NOx (g/s)	RSP (g/s)	X-Coordinate	Y-Coordinate	Elevation (m)	NOx (g/s) of Each Source	Release Height (m)	Sigma Y	Sigma Z	Number of Volume Source	RSP (g/s) of Each Source
1	B8	0.145	0.008	841909.0	818127.2	0.0	0.0206	3.5	3.26	3.26	7	0.00110
	B9			841915.6	818129.6	0.0	0.0206	3.5	3.26	3.26		0.00110
	B10			841922.1	818132.0	0.0	0.0206	3.5	3.26	3.26		0.00110
	B11			841928.7	818134.3	0.0	0.0206	3.5	3.26	3.26		0.00110
	B12			841935.3	818136.7	0.0	0.0206	3.5	3.26	3.26		0.00110
	B13			841941.9	818139.1	0.0	0.0206	3.5	3.26	3.26		0.00110
	B14			841948.5	818141.4	0.0	0.0206	3.5	3.26	3.26		0.00110
2	C5	0.099	0.005	841978.3	818184.1	9.1	0.0248	4.0	6.51	3.72	4	0.00128
	C6			841992.2	818185.6	9.1	0.0248	4.0	6.51	3.72		0.00128
	C7			842006.2	818187.1	9.1	0.0248	4.0	6.51	3.72		0.00128
	C8			842020.1	818188.6	9.1	0.0248	4.0	6.51	3.72		0.00128
3	D7	0.072	0.004	842091.4	818192.5	15.2	0.0120	4.0	4.19	3.72	6	0.00059
	D8			842082.6	818190.5	15.2	0.0120	4.0	4.19	3.72		0.00059
	D9			842073.8	818188.5	15.2	0.0120	4.0	4.19	3.72		0.00059
	D10			842065.0	818186.5	15.2	0.0120	4.0	4.19	3.72		0.00059
	D11			842056.2	818184.5	15.2	0.0120	4.0	4.19	3.72		0.00059
	D12			842047.4	818182.5	15.2	0.0120	4.0	4.19	3.72		0.00059
3	E8	0.080	0.004	842058.6	818086.7	0.0	0.0114	4.0	3.26	3.72	7	0.00059
	E9			842052.1	818084.0	0.0	0.0114	4.0	3.26	3.72		0.00059
	E10			842045.7	818081.3	0.0	0.0114	4.0	3.26	3.72		0.00059
	E11			842039.2	818078.7	0.0	0.0114	4.0	3.26	3.72		0.00059
	E12			842032.7	818076.0	0.0	0.0114	4.0	3.26	3.72		0.00059
	E13			842026.3	818073.3	0.0	0.0114	4.0	3.26	3.72		0.00059
	E14			842019.8	818070.6	0.0	0.0114	4.0	3.26	3.72		0.00059
5	G6	0.906	0.047	842134.3	818149.5	0.0	0.1813	4.75	5.12	4.42	5	0.00948
	G7			842125.6	818142.7	0.0	0.1813	4.75	5.12	4.42		0.00948
	G8			842116.9	818136.0	0.0	0.1813	4.75	5.12	4.42		0.00948
	G9			842108.1	818129.3	0.0	0.1813	4.75	5.12	4.42		0.00948
	G10			842099.5	818122.5	0.0	0.1813	4.75	5.12	4.42		0.00948
6	H7	0.136	0.007	841880.6	818070.5	0.0	0.0227	4.0	4.19	3.72	6	0.00113
	H8			841889.6	818071.9	0.0	0.0227	4.0	4.19	3.72		0.00113
	H9			841898.6	818073.3	0.0	0.0227	4.0	4.19	3.72		0.00113
	H10			841907.5	818074.7	0.0	0.0227	4.0	4.19	3.72		0.00113
	H11			841916.6	818078.1	0.0	0.0227	4.0	4.19	3.72		0.00113
	H12			841925.3	818081.7	0.0	0.0227	4.0	4.19	3.72		0.00113
7	J8	0.356	0.019	842341.4	818209.2	17.5	0.0508	4.75	3.26	4.42	7	0.00274
	J9			842336.3	818204.4	17.5	0.0508	4.75	3.26	4.42		0.00274
	J10			842331.2	818199.6	17.5	0.0508	4.75	3.26	4.42		0.00274
	J11			842326.1	818194.8	17.5	0.0508	4.75	3.26	4.42		0.00274
	J12			842321.0	818190.0	17.5	0.0508	4.75	3.26	4.42		0.00274
	J13			842315.9	818185.2	17.5	0.0508	4.75	3.26	4.42		0.00274
	J14			842310.8	818180.4	17.5	0.0508	4.75	3.26	4.42		0.00274

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Ventilation Building and Portal Emission of Tseung Kwan O - Lam Tin Tunnel (TKO-LTT)

Hourly Profile for Portals Emissions of the Concurrent Project - TKO-LTT

Hour	T2 Eastbound Slip Road		Link 190 & Link 226		Link 191		Link 192		TKO-LTT Westbound		Link 225		TKO-LTT Westbound Slip	
	NOx	RSP	NOx	RSP	NOx	RSP	NOx	RSP	NOx	RSP	NOx	RSP	NOx	RSP
Hour 1	2.9%	2.6%	1.6%	1.2%	2.0%	1.4%	1.6%	1.2%	2.4%	2.1%	2.7%	2.1%	1.7%	1.3%
Hour 2	2.1%	1.8%	1.2%	0.9%	1.4%	1.0%	1.2%	0.9%	1.7%	1.5%	1.9%	1.5%	1.2%	1.0%
Hour 3	1.6%	1.4%	0.9%	0.7%	1.1%	0.8%	0.9%	0.7%	1.4%	1.2%	1.5%	1.1%	1.0%	0.8%
Hour 4	1.2%	1.0%	0.7%	0.5%	0.8%	0.6%	0.7%	0.5%	1.0%	0.9%	1.1%	0.8%	0.7%	0.6%
Hour 5	1.1%	0.9%	0.6%	0.5%	0.8%	0.5%	0.6%	0.5%	0.9%	0.8%	1.0%	0.8%	0.6%	0.5%
Hour 6	0.8%	0.9%	1.6%	1.8%	1.4%	1.7%	1.6%	1.8%	1.2%	1.3%	1.0%	1.2%	1.8%	2.3%
Hour 7	1.8%	2.0%	3.6%	4.1%	3.2%	3.8%	3.6%	4.1%	2.5%	2.8%	2.2%	2.6%	3.9%	5.0%
Hour 8	4.9%	5.3%	9.7%	10.9%	8.5%	10.1%	9.7%	10.9%	6.6%	7.3%	5.9%	6.9%	10.1%	13.0%
Hour 9	4.5%	4.6%	8.6%	9.0%	7.0%	7.4%	8.6%	9.0%	6.5%	6.7%	4.8%	5.0%	8.2%	8.1%
Hour 10	4.0%	3.8%	7.7%	7.3%	6.4%	5.8%	7.7%	7.3%	5.8%	5.6%	4.4%	3.9%	7.8%	6.6%
Hour 11	3.1%	2.8%	5.9%	5.3%	4.7%	4.0%	5.9%	5.3%	4.7%	4.5%	3.3%	2.7%	5.8%	4.1%
Hour 12	2.9%	2.6%	5.5%	5.0%	4.4%	3.8%	5.4%	5.0%	4.2%	4.1%	3.0%	2.6%	5.4%	4.2%
Hour 13	3.0%	3.2%	5.9%	6.3%	5.0%	5.5%	5.9%	6.3%	4.3%	4.7%	3.5%	3.8%	6.1%	7.1%
Hour 14	3.2%	3.3%	6.2%	6.5%	5.3%	5.7%	6.2%	6.5%	4.5%	4.8%	3.6%	3.9%	6.4%	7.2%
Hour 15	3.0%	3.1%	5.8%	6.0%	4.8%	5.1%	5.8%	6.0%	4.4%	4.5%	3.3%	3.4%	5.8%	6.0%
Hour 16	7.1%	7.5%	4.0%	4.2%	5.0%	5.3%	4.1%	4.2%	5.7%	5.9%	6.6%	7.2%	4.0%	4.1%
Hour 17	8.3%	9.0%	5.2%	5.9%	6.8%	8.1%	5.2%	5.9%	6.4%	7.0%	8.6%	10.1%	4.7%	5.2%
Hour 18	8.8%	9.5%	5.1%	5.6%	6.5%	7.3%	5.2%	5.6%	6.8%	7.2%	8.5%	9.6%	4.8%	5.1%
Hour 19	8.7%	9.3%	4.9%	5.3%	6.1%	6.7%	5.0%	5.3%	6.9%	7.0%	8.1%	9.0%	4.8%	4.8%
Hour 20	6.5%	6.6%	3.9%	3.8%	4.7%	4.8%	3.8%	3.8%	5.2%	5.0%	6.2%	6.4%	3.7%	3.5%
Hour 21	5.0%	4.9%	2.7%	2.5%	3.3%	2.9%	2.8%	2.5%	4.2%	3.8%	4.5%	4.2%	2.9%	2.5%
Hour 22	5.4%	5.0%	3.0%	2.4%	3.7%	2.7%	3.0%	2.4%	4.4%	4.0%	5.0%	4.0%	3.1%	2.5%
Hour 23	5.4%	4.9%	3.0%	2.4%	3.8%	2.6%	3.1%	2.4%	4.4%	3.9%	5.0%	4.0%	3.1%	2.4%
Hour 24	4.6%	4.1%	2.6%	2.0%	3.2%	2.2%	2.6%	2.0%	3.7%	3.3%	4.2%	3.4%	2.6%	2.1%