

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2013

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
West Kowloon Cultural District	Heavy construction Source ID: zone 1: B16	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	18% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 4.3109E-05 g/m ² /s (unmitigated) 3.57804E-06 g/m ² /s (mitigated)	Assume 18% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 1: B16	Percentage active area, p Emission Factor Emission Rate	18% 0.85 Mg/hectare/year 4.8516E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: B12-B15	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	6% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 1.43697E-05 g/m ² /s (unmitigated) 1.19268E-06 g/m ² /s (mitigated)	Assume 6% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: B12-B15	Percentage active area, p Emission Factor Emission Rate	6% 0.85 Mg/hectare/year 1.6172E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 3: B8, B9, B11	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	4% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 9.57977E-06 g/m ² /s (unmitigated) 7.95121E-07 g/m ² /s (mitigated)	Assume 4% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 3: B8, B9, B11	Percentage active area, p Emission Factor Emission Rate	4% 0.85 Mg/hectare/year 1.07813E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: B1 - B7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: B1 - B7	Percentage active area, p Emission Factor Emission Rate	1% 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: B10, B17, BB3 - BB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: B10, B17, BB3 - BB5	Percentage active area, p Emission Factor Emission Rate	100% 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2013

Concurrent Projects - at Year 2013

Description	Sources	Parameter	Emission Rate	Remarks
XRL - West Kowloon Barging Point (Construction Site)	Haul road to barging points	Particle size multiplier, k	3.23 g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. Mean Silt Loading of Quarry, AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Uncontrolled total loading range from 4.2+1.9g/m2, for a mixture of sand and native soil, to 11.0+3.8g/m2 for native soil alone, Page 10 of Improved Activity Levels for National Emission Inventories of Fugitive Dust from Paved and Unpaved Roads. Average weigh of the vehicles traveling the road, extracted from SP License E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Extracted from SP License of Express Rail Link (Appendix C) For road HR7A-C For road HR8A-B For road HR9 For road HR10A-C For road HR11 For road HR12A From 7:00 to 19:00, extracted from SP License of Express Rail Link (Appendix C) Extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 900, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1800, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1440, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1080, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 720, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 360, extracted from SP License of Express Rail Link (Appendix C)
		Road surface silt loading, sL	8.2 g/m2	
		Average truck weight, W	16 tons	
		TSP emission factor, E	370.7 g/VKT	
		No. of truck trips per day	900 veh/day	
			1800 veh/day	
			1440 veh/day	
			1080 veh/day	
			720 veh/day	
			360 veh/day	
	No. of operation hour	12 hr		
	% of dust suppression	97.5 %		
	Emission Rate	1.93E-04 g/m/s (mitigated)		
	Source ID: HR7A1, HR7B-C	3.86E-04 g/m/s (mitigated)		
	HR8A-B	3.09E-04 g/m/s (mitigated)		
	HR9	2.32E-04 g/m/s (mitigated)		
	HR10A-C	1.54E-04 g/m/s (mitigated)		
	HR11	7.72E-05 g/m/s (mitigated)		
	HR12A			
XRL - West Kowloon Barging Point (5 Barging Points for West Kowloon Terminus)	Unloading of spoils to barge Source ID: BP4-7	--	4.27E-03 g/s (mitigated)	Extract from SP License of Express Rail Link (Appendix C), assume 12 hours of operation
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
		Road surface silt loading, sL	12 g/m2	
		Average truck weight, W	36 tons	
			45 tons	
			30.8 tons	
		TSP emission factor, E	1199 g/VKT	
	1505 g/VKT			
	1022 g/VKT			
	No. of operation hour	12 hr		
	% of dust suppression	97.5 %		
	Sum of Emission Rate	1.63E-04 g/m/s (mitigated)		
	Source ID: EP11	1.42E-04 g/m/s (mitigated)		
	EP12	6.35E-05 g/m/s (mitigated)		
	EP13			
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
		Road surface silt loading, sL	12 g/m2	
		Average truck weight, W	36 tons	
			45 tons	
			30.8 tons	
		TSP emission factor, E	1199 g/VKT	
	1505 g/VKT			
	1022 g/VKT			
	No. of operation hour	12 hr		
	% of dust suppression	99.0 %		
	Sum of Emission Rate	8.36E-06 g/m/s (mitigated)		
	Source ID: EP14	4.00E-05 g/m/s (mitigated)		
	EP15	1.70E-05 g/m/s (mitigated)		
	EP16	8.52E-06 g/m/s (mitigated)		
	EP17			
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.)
		Road surface silt loading, sL	12 g/m2	
		Average truck weight, W	14 tons	
			15 tons	
		12 tons		
	TSP emission factor, E			

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2013

Concurrent Projects - at Year 2013

Description	Sources	Parameter	Emission Rate	Remarks
			457 g/VKT 491 g/VKT 391 g/VKT 12 hr 97.5 %	Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
	Source ID: EP18 EP19 EP20	No. of operation hour % of dust suppression Sum of Emission Rate	6.12E-05 g/m/s (mitigated) 5.44E-05 g/m/s (mitigated) 2.31E-05 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m2 14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 12 hr 99.0 %	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer $E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E Mitigation efficiency Emission Rate	272000 kg/h 272 Mg/h 0.74 2 % 3.5 m/s 0.002165163 kg/Mg 0.588924442 kg/hr 99 % 1.64E-03 g/s (mitigated)	Extracted from SP License of Express Rail Link (Appendix C). For TSP, AP-42, section 13.2.4, 11/06 ed. Extracted from SP License of Express Rail Link (Appendix C). PATH Year 2010 mean wind speed $E = k \times (0.0016) \times ((U/2.2)^{1.3} / (M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.) Extracted from SP License of Express Rail Link (Appendix C).
West Kowloon Terminus Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor Dust extraction flow rate for each mixer No. of operation hour No. of small cement silos Emission height Emission Rate	30 mg/m3 1300 m3/hr 12 hr 4 21 or 22 1.08E-02 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m
	PFA weight Hopper Source ID: EP3-EP4	Production rate Density Emission Factor Emission Rate	160 m3/hr 0.001989 mg/m3 2.60E-03 kg/Mg 2.30E-04 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor Dust extraction flow rate for No. of operation hour No. of small cement silos Emission height Emission Rate	40 mg/m3 1500 m3/hr 12 hr 2 13 1.67E-02 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2014

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: zone 1: C45-C52	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 1: C45-C52	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2a: C37,C39, C41, C42	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	45 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000107772 g/m ² /s (unmitigated) 8.94511E-06 g/m ² /s (mitigated)	Assume 45% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2a: C37,C39, C41, C42	Percentage active area, p Emission Factor Emission Rate	45 % 0.85 Mg/hectare/year 1.2129E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: C26-C29, C32, C33	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	9 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.15545E-05 g/m ² /s (unmitigated) 1.78902E-06 g/m ² /s (mitigated)	Assume 9% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: C26-C29, C32, C33	Percentage active area, p Emission Factor Emission Rate	9 % 0.85 Mg/hectare/year 2.4258E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 3: C16-C18	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	10 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-05 g/m ² /s (unmitigated) 1.9878E-06 g/m ² /s (mitigated)	Assume 10% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 3: C16-C18	Percentage active area, p Emission Factor Emission Rate	10 % 0.85 Mg/hectare/year 2.69533E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: C1-C10, C14	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	10 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-05 g/m ² /s (unmitigated) 1.9878E-06 g/m ² /s (mitigated)	Assume 10% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: C1-C10, C14	Percentage active area, p Emission Factor Emission Rate	10 % 0.85 Mg/hectare/year 2.69533E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: C15, C53-C54, CB1- CB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: C15, C53-C54, CB1- CB5	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2014

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate	Remarks	
XRL - West Kowloon Barging Point (Construction Site)	Haul road to barging points	Particle size multiplier, k	3.23 g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. Mean Silt Loading of Quarry, AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Uncontrolled total loading range from 4.2+1.9g/m2, for a mixture of sand and native soil, to 11.0+3.8g/m2 for native soil alone, Page 10 of Improved Activity Levels for National Emission Inventories of Fugitive Dust from Paved and Unpaved Roads. Average weigh of the vehicles traveling the road, extracted from SP License E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Extracted from SP License of Express Rail Link (Appendix C) For road HR7A-C For road HR8A-B For road HR9 For road HR10A-C For road HR11 For road HR12A From 7:00 to 19:00, extracted from SP License of Express Rail Link (Appendix C) Extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 900, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1800, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1440, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1080, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 720, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 360, extracted from SP License of Express Rail Link (Appendix C)	
		Road surface silt loading, sL	8.2 g/m2		
		Average truck weight, W	16 tons		
		TSP emission factor, E	370.7 g/VKT		
		No. of truck trips per day	900 veh/day		
			1800 veh/day		
			1440 veh/day		
			1080 veh/day		
			720 veh/day		
			360 veh/day		
		No. of operation hour	12 hr		
		% of dust suppression	97.5 %		
Source ID:		1.93E-04 g/m/s (mitigated)			
HR7A2, HR7B-C		3.86E-04 g/m/s (mitigated)			
HR8A-B		3.09E-04 g/m/s (mitigated)			
HR9		2.32E-04 g/m/s (mitigated)			
HR10A-C		1.54E-04 g/m/s (mitigated)			
HR11		7.72E-05 g/m/s (mitigated)			
HR12A					
XRL - West Kowloon Barging Point (5 Barging Points for West Kowloon Terminus)	Unloading of spoils to barge Source ID: BP4-7	--	4.27E-03 g/s (mitigated)	Extract from EIA report of Express Rail Link (Appendix 12.1 p.3), assume 12 hours of operation	
Concrete Batching Plant - Phase 1					
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.	
		Road surface silt loading, sL	12 g/m2		
		Average truck weight, W	36 tons		
			45 tons		
			30.8 tons		
		TSP emission factor, E	1199 g/VKT		
			1505 g/VKT		
			1022 g/VKT		
		No. of operation hour	12 hr		
		% of dust suppression	97.5 %		
		Source ID:			1.63E-04 g/m/s (mitigated)
		EP11			1.42E-04 g/m/s (mitigated)
EP12		6.35E-05 g/m/s (mitigated)			
EP13					
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.	
		Road surface silt loading, sL	12 g/m2		
		Average truck weight, W	36 tons		
			45 tons		
			30.8 tons		
		TSP emission factor, E	1199 g/VKT		
			1505 g/VKT		
			1022 g/VKT		
		No. of operation hour	12 hr		
		% of dust suppression	99.0 %		
		Source ID:			8.36E-06 g/m/s (mitigated)
		EP14			4.00E-05 g/m/s (mitigated)
EP15		1.70E-05 g/m/s (mitigated)			
EP16		8.52E-06 g/m/s (mitigated)			
EP17					
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker	
		Road surface silt loading, sL	12 g/m2		
		Average truck weight, W	14 tons		
			15 tons		

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2014

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate	Remarks
		TSP emission factor, E	12 tons	Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.)
			457 g/VKT	Aggregate Tipper Truck
			491 g/VKT	Cement Tanker
			391 g/VKT	Concrete Mixer
		No. of operation hour	12 hr	From 7:00-19:00
		% of dust suppression	97.5 %	
	Source ID:	Sum of Emission Rate		Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer.
	EP18		6.12E-05 g/m/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
	EP19		5.44E-05 g/m/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively.
	EP20		2.31E-05 g/m/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
		Road surface silt loading, sL	12 g/m ²	
		Average truck weight, W	14 tons	
			15 tons	
			12 tons	
		TSP emission factor, E	457 g/VKT	
			491 g/VKT	
			391 g/VKT	
		No. of operation hour	12 hr	
		% of dust suppression	99.0 %	
	Source ID:	Sum of Emission Rate		
	EP21		2.73E-06 g/m/s (mitigated)	
	EP22		1.52E-05 g/m/s (mitigated)	
	EP23		3.26E-06 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate	272000 kg/h	
			272 Mg/h	
		Particle size multiplier, k	0.74	
		Moisture content, M	2 %	
		Mean wind speed, U	3.5 m/s	
		Emission Factor, E	0.002165163 kg/Mg	
			0.588924442 kg/hr	
		Mitigation efficiency	99 %	
		Emission Rate	1.64E-03 g/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor	30 mg/m ³	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m
		Dust extraction flow rate for each mixer	1300 m ³ /hr	
		No. of operation hour	12 hr	
		No. of small cement silos	4	
		Emission height	21 or 22	
		Emission Rate	1.08E-02 g/s (mitigated)	
	PFA weight Hopper Source ID: EP3-EP4	Production rate	160 m ³ /hr	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
		Density	0.001989 mg/m ³	
		Emission Factor	2.60E-03 kg/Mg	
		Emission Rate	2.30E-04 g/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor	40 mg/m ³	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 Extracted from Specified Processes License (checked on 13 Jan 2012)
		Dust extraction flow rate for each mixer	1500 m ³ /hr	
		No. of operation hour	12 hr	
		No. of small cement silos	2	
		Emission height	13	
		Emission Rate	1.67E-02 g/s (mitigated)	
Concrete Batching Plant - Phase 2				
West Kowloon Terminus Concrete Batching Plant - Phase 2 (Construction Site)	Paved haul road outside concrete batching plant -	Particle size multiplier, k	3.23 g/VKT	All calculations and assumptions are extracted from AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Aggregate Tipper Truck (Laden) Cement Tanker (Laden) Concrete Mixer Truck (Unladen) E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and
		Road surface silt loading, sL	12 g/m ²	
		Average truck weight, W	38 tons	
			44 tons	
			13 tons	
		TSP emission factor, E	1267 g/VKT	
			1471 g/VKT	
			424 g/VKT	
		No. of truck trips per day	10 veh/hr	
			0 veh/hr	
			0 veh/hr	
		No. of operation hour	12 hr	
		% of dust suppression	91.0 %	
		Emission Rate	3.17E-04 g/m/s (mitigated)	
			0.00E+00 g/m/s (mitigated)	
			0.00E+00 g/m/s (mitigated)	
		Distance	30 m	
		Area	90 m ²	
	Source ID:	Sum of Emission Rate		

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2014

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate	Remarks
	AEP 1 AEP 2 AEP 3 AEP 6 AEP 8		1.06E-04 g/m2/s (mitigated) 1.41E-04 g/m2/s (mitigated) 5.99E-05 g/m2/s (mitigated) 1.65E-04 g/m2/s (mitigated) 3.53E-05 g/m2/s (mitigated) 1.06E-04 g/m2/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and No. of vehicle of aggregate tipper truck, cement tanker and No. of vehicle of aggregate tipper truck, cement tanker and No. of vehicle of aggregate tipper truck, cement tanker and No. of vehicle of aggregate tipper truck, cement tanker and
West Kowloon Terminus Concrete Batching Plant - Phase 2 (Construction Site)	Paved haul road outside concrete batching plant - (Construction Site)	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate Distance Area Source ID: Sum of Emission Rate AEP 4 AEP 5 AEP 7	3.23 g/VKT 12 g/m2 38 tons 44 tons 13 tons 1267 g/VKT 1471 g/VKT 424 g/VKT 10 veh/hr 4 veh/hr 10 veh/hr 12 hr 100.0 % 0.00E+00 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 30 m 90 m2 0.00E+00 g/m2/s (mitigated) 0.00E+00 g/m2/s (mitigated) 0.00E+00 g/m2/s (mitigated) 0.00E+00 g/m2/s (mitigated)	All calculations and assumptions are extracted from AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Aggregate Tipper Truck (Laden) Cement Tanker (Laden) Concrete Mixer Truck (Unladen) E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 4, and 10 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 0, and 0 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant - Phase 2 (Construction Site)	Paved haul road outside concrete batching plant - (Construction Site) Leave CBP	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate Distance Area Source ID: Sum of Emission Rate AEP 9 AEP 11 AEP 12 AEP 13 AEP 14 AEP 16 AEP 17	3.23 g/VKT 12 g/m2 18 tons 14 tons 30 tons 591 g/VKT 457 g/VKT 995 g/VKT 10 veh/hr 0 veh/hr 10 veh/hr 12 hr 91.0 % 1.48E-04 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 2.49E-04 g/m/s (mitigated) 30 m 90 m2 1.32E-04 g/m2/s (mitigated) 7.62E-06 g/m2/s (mitigated) 8.29E-05 g/m2/s (mitigated) 9.06E-05 g/m2/s (mitigated) 9.06E-05 g/m2/s (mitigated) 4.92E-05 g/m2/s (mitigated) 1.32E-04 g/m2/s (mitigated) 1.32E-04 g/m2/s (mitigated)	All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Aggregate Tipper Truck (Unladen) Cement Tanker (Unladen) Concrete Mixer Truck (Laden) E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 10 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 10 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 10 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 0, and 10 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 0, and 10 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant - Phase 2 (Construction Site)	Paved haul road outside concrete batching plant - (Construction Site) Toward CBP	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression	3.23 g/VKT 12 g/m2 38 tons 44 tons 13 tons 1267 g/VKT 1471 g/VKT 424 g/VKT 10 veh/hr 4 veh/hr 10 veh/hr 12 hr 100.0 %	All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Aggregate Tipper Truck (Laden) Cement Tanker (Laden) Concrete Mixer Truck (Unladen) E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2014

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate	Remarks
	Source ID: AEP 10 AEP 15	Emission Rate Distance Area Sum of Emission Rate	0.00E+00 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 30 m 90 m ² 0.00E+00 g/m ² /s (mitigated) 0.00E+00 g/m ² /s (mitigated) 0.00E+00 g/m ² /s (mitigated)	Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 0, and 10 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant - Phase 2 (Unloading of raw materials)	Unloading aggregate Source ID: PEP9-PEP10	Consumption Rate Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E Mitigation efficiency Emission height Emission Rate	210000 kg/h 210 Mg/h 0.74 2 % 3.5 m/s 0.002165163 kg/Mg 0.454684312 kg/hr 50 % 5.5 m 6.32E-02 g/s (mitigated)	All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link For TSP, AP-42, section 13.2.4, 11/06 ed. All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1). PATH year 2010 mean wind speed $E = k \times (0.0016) \times ((U/2.2)^{1.3} / (M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.) All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1).
West Kowloon Terminus Concrete Batching Plant - Phase 2 (Cement / PFA Silos)	Cement Silos Source ID: PEP 1 to PEP 7	Emission height Emission Rate	5.5 m 1.48E-02 g/s (mitigated)	All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link
	Mixer & Weight Hopper Source ID: PEP8	Emission height Emission Rate	5.5 m 1.98E-02 g/s (mitigated)	All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1).
West Kowloon Highway Scheme HIJ				
West Kowloon Highway Scheme HIJ	Heavy construction Source ID: AA9-12	--	8.98104E-06 g/m ² /s (mitigated)	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.3), assume 30% active area
	Wind Erosion Source ID: AA9-12	--	8.086E-07 g/m ² /s	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.3), assume 30% active area
West Kowloon Highway Scheme Q (Interim)	Heavy construction Source ID: FF1-FF9	--	8.98104E-06 g/m ² /s (mitigated)	Extract from PER report of Scheme Q (Appendix 3.2), assume 30% active area
	Wind Erosion Source ID: FF1-FF9	--	8.086E-07 g/m ² /s	Extract from PER report of Scheme Q (Appendix 3.2), assume 30% active area

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2015

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: zone 1: E60	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 1: E60	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2a: E51-E55, E57-E59	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	6 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 1.43697E-05 g/m ² /s (unmitigated) 1.19268E-06 g/m ² /s (mitigated)	Assume 6% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2a: E51-E55, E57-E59	Percentage active area, p Emission Factor Emission Rate	6 % 0.85 Mg/hectare/year 1.6172E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: E26, E28, E30-E35, E39, E41- E43, E45-E47, E49, E50	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	4 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 9.57977E-06 g/m ² /s (unmitigated) 7.95121E-07 g/m ² /s (mitigated)	Assume 4% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: E26, E28, E30-E35, E39, E41- E43, E45-E47, E49, E50	Percentage active area, p Emission Factor Emission Rate	4 % 0.85 Mg/hectare/year 1.07813E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 3: E12-E17, E21-E25, E27, E29	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-06 g/m ² /s (unmitigated) 3.97561E-07 g/m ² /s (mitigated)	Assume 2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 3: E12-E17, E21-E25, E27, E29	Percentage active area, p Emission Factor Emission Rate	2 % 0.85 Mg/hectare/year 5.39066E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: E1-E10, E18-E20, E36-E38, E40, E44, E48, E56, E61	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.3 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 7.18483E-07 g/m ² /s (unmitigated) 5.96341E-08 g/m ² /s (mitigated)	Assume 0.3% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: E1-E10, E18-E20, E36-E38, E40, E44, E48, E56, E61	Percentage active area, p Emission Factor Emission Rate	0.3 % 0.85 Mg/hectare/year 8.086E-09 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: E11, EB1-EB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: E11, EB1-EB5	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Barging Point (Construction Site)	Haul road to barging points	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day	3.23 g/VKT 8.2 g/m ² 16 tons 370.7 g/VKT 900 veh/day 1800 veh/day 1440 veh/day 1080 veh/day 720 veh/day	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. Mean Silt Loading of Quarry, AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Uncontrolled total loading range from 4.2+1.9g/m ² , for a mixture of sand and native soil, to 11.0+3.8g/m ² for native soil alone, Page 10 of Improved Activity Levels for National Emission Inventories of Fugitive Dust from Paved and Unpaved Roads. Average weigh of the vehicles traveling the road, extracted from SP License E=k x (sL) ^{0.91x} (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Extracted from SP License of Express Rail Link (Appendix C) For road HR7A-C For road HR8A-B For road HR9 For road HR10A-C For road HR11

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2015

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
	Source ID: HR7A3, HR7B, HR7C1 HR8A-B HR9 HR10A-C HR11 HR12A	No. of operation hour % of dust suppression Emission Rate	360 veh/day 12 hr 97.5 % 4.75E-16 g/m/s (mitigated) 9.49E-16 g/m/s (mitigated) 7.59E-16 g/m/s (mitigated) 5.70E-16 g/m/s (mitigated) 3.80E-16 g/m/s (mitigated) 1.90E-16 g/m/s (mitigated)	For road HR12A From 7:00 to 19:00, extracted from SP License of Express Rail Link (Appendix C) Extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 900, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1800, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1440, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 1080, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 720, extracted from SP License of Express Rail Link (Appendix C) No. of truck per day: 360, extracted from SP License of Express Rail Link (Appendix C)
West Kowloon Barging Point (5 Barging Points for West Kowloon Terminus Works	Unloading of spoils to barge Source ID: BP4-7	--	4.27E-03 g/s (mitigated)	Extract from EIA report of Express Rail Link (Appendix 12.1 p.3) , assume 12 hours of operation
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: EP11 EP12 EP13	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m2 36 tons 45 tons 30.8 tons 1199 g/VKT 1505 g/VKT 1022 g/VKT 12 hr 97.5 % 1.63E-04 g/m/s (mitigated) 1.42E-04 g/m/s (mitigated) 6.35E-05 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: EP14 EP15 EP16 EP17	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m2 36 tons 45 tons 30.8 tons 1199 g/VKT 1505 g/VKT 1022 g/VKT 12 hr 99.0 % 8.36E-06 g/m/s (mitigated) 4.00E-05 g/m/s (mitigated) 1.70E-05 g/m/s (mitigated) 8.52E-06 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle Source ID: EP18 EP19 EP20	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m2 14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 12 hr 97.5 % 6.12E-05 g/m/s (mitigated) 5.44E-05 g/m/s (mitigated) 2.31E-05 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W	3.23 g/VKT 12 g/m2 14 tons 15 tons	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2015

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks
	Source ID: EP21 EP22 EP23	TSP emission factor, E 12 tons 457 g/VKT 491 g/VKT 391 g/VKT No. of operation hour 12 hr % of dust suppression 99.0 % Sum of Emission Rate 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated)	Unladen weight of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate 272000 kg/h 272 Mg/h Particle size multiplier, k 0.74 Moisture content, M 2 % Mean wind speed, U 3.5 m/s Emission Factor, E 0.002165163 kg/Mg 0.588924442 kg/hr Mitigation efficiency 99 % Emission Rate 1.64E-03 g/s (mitigated)	Extracted from SP License of Express Rail Link (Appendix C). For TSP, AP-42, section 13.2.4, 11/06 ed. Extracted from Specified Processes License (checked on 13 Jan 2012) PATH year 2010 mean wind speed $E=k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.) Extracted from Specified Processes License (checked on 13 Jan 2012)
West Kowloon Terminus Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor 30 mg/m3 Dust extraction flow rate for each mixer 1300 m3/hr No. of operation hour 12 hr No. of small cement silos 4 Emission height 21 or 22 Emission Rate 1.08E-02 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m
	PFA weight Hopper Source ID: EP3-EP4	Production rate 160 m3/hr Density 0.001989 mg/m3 Emission Factor 2.60E-03 kg/Mg Emission Rate 2.30E-04 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor 40 mg/m3 Dust extraction flow rate for each mixer 1500 m3/hr No. of operation hour 12 hr No. of small cement silos 2 Emission height 13 Emission Rate 1.67E-02 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 Extracted from Specified Processes License (checked on 13 Jan 2012)

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2015

Concurrent Projects - at Year 2015

Description	Sources	Parameter	Emission Rate	Remarks
West Kowloon Highway Scheme HIJ	Heavy construction Source ID: AA9-12	--	8.98104E-06 g/m ² /s (mitigated)	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.3), assume 30% active area
	Wind Erosion Source ID: AA9-12	--	8.086E-07 g/m ² /s	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.3), assume 30% active area
West Kowloon Highway Scheme Q (Interim)	Heavy construction Source ID: FF1-FF9	--	8.98104E-06 g/m ² /s (mitigated)	Extract from PER report of Scheme Q (Appendix 3.2), assume 30% active area
	Wind Erosion Source ID: FF1-FF9	--	8.086E-07 g/m ² /s	Extract from PER report of Scheme Q (Appendix 3.2), assume 30% active area

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2016

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: zone 2a: F27-F29, F31-F35	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2a: F27-F29, F31-F35	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: F19, F20, F23-F25	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.3 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 7.18483E-07 g/m ² /s (unmitigated) 5.96341E-08 g/m ² /s (mitigated)	Assume 0.3% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: F19, F20, F23-F25	Percentage active area, p Emission Factor Emission Rate	0.3 % 0.85 Mg/hectare/year 8.086E-09 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 3: F8-F12	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-07 g/m ² /s (unmitigated) 3.97561E-08 g/m ² /s (mitigated)	Assume 0.2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 3: F8-F12	Percentage active area, p Emission Factor Emission Rate	0.2 % 0.85 Mg/hectare/year 5.39066E-09 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone4: F7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	17 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.0714E-05 g/m ² /s (unmitigated) 3.37926E-06 g/m ² /s (mitigated)	Assume 17% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone4: F7	Percentage active area, p Emission Factor Emission Rate	17 % 0.85 Mg/hectare/year 4.58206E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: F1-F6, F13-F18, F21-F22, F26, F30	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.5 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 1.19747E-06 g/m ² /s (unmitigated) 9.93901E-08 g/m ² /s (mitigated)	Assume 0.5% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: F1-F6, F13-F18, F21-F22, F26, F30	Percentage active area, p Emission Factor Emission Rate	0.5 % 0.85 Mg/hectare/year 1.34767E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: FB1-FB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: FB1-FB5	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
XRL - West Kowloon Barging Point (Construction Site)	Haul road to barging points	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate	3.23 g/VKT 8.2 g/m ² 16 tons 370.7 g/VKT 900 veh/day 1800 veh/day 1440 veh/day 1080 veh/day 720 veh/day 360 veh/day 12 hr 97.5 %	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. Mean Silt Loading of Quarry, AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Uncontrolled total loading range from 4.2+1.9g/m ² , for a mixture of sand and native soil, to 11.0+3.8g/m ² for native soil alone, Page 10 of Improved Activity Levels for National Emission Inventories of Fugitive Dust from Paved and Unpaved Roads. Average weigh of the vehicles traveling the road, extracted from SP License E=k x (sL) ^{0.91x} (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Extracted from SP License of Express Rail Link (Appendix C) For road HR7A-C For road HR8A-B For road HR9 For road HR10A-C For road HR11 For road HR12A From 7:00 to 19:00, extracted from SP License of Express Rail Link (Appendix C) Extracted from SP License of Express Rail Link (Appendix C)

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2016

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
	HR7A-C		4.75E-16 g/m/s (mitigated)	No. of truck per day: 900, extracted from SP License of Express Rail Link (Appendix C)
	HR8A-B		9.49E-16 g/m/s (mitigated)	No. of truck per day: 1800, extracted from SP License of Express Rail Link (Appendix C)
	HR9		7.59E-16 g/m/s (mitigated)	No. of truck per day: 1440, extracted from SP License of Express Rail Link (Appendix C)
	HR10A-C		5.70E-16 g/m/s (mitigated)	No. of truck per day: 1080, extracted from SP License of Express Rail Link (Appendix C)
	HR11		3.80E-16 g/m/s (mitigated)	No. of truck per day: 720, extracted from SP License of Express Rail Link (Appendix C)
	HR12A		1.90E-16 g/m/s (mitigated)	No. of truck per day: 360, extracted from SP License of Express Rail Link (Appendix C)
XRL - West Kowloon Barging Point (5 Barging Points for West Kowloon Terminus Works Area)	Unloading of spoils to barge Source ID: BP4-7	--	4.27E-03 g/s (mitigated)	Extract from SP License of Express Rail Link (Appendix C) , assume 12 hours of operation
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
		No. of truck trips per day	12 veh/hr 2 veh/hr 6 veh/hr	
		No. of operation hour	12 hr	
		% of dust suppression	97.5 %	
	Source ID:	Sum of Emission Rate		
	EP11		1.63E-04 g/m/s (mitigated)	
	EP12		1.42E-04 g/m/s (mitigated)	
	EP13		6.35E-05 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
		TSP emission factor, E	1199 g/VKT 1505 g/VKT 1022 g/VKT	
		No. of operation hour	12 hr	
		% of dust suppression	99.0 %	
	Source ID:	Sum of Emission Rate		
	EP14		8.36E-06 g/m/s (mitigated)	
	EP15		4.00E-05 g/m/s (mitigated)	
	EP16		1.70E-05 g/m/s (mitigated)	
	EP17		8.52E-06 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W	3.23 g/VKT 12 g/m ² 14 tons 15 tons 12 tons	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.
		TSP emission factor, E	457 g/VKT 491 g/VKT 391 g/VKT	
		No. of operation hour	12 hr	
		% of dust suppression	97.5 %	
	Source ID:	Sum of Emission Rate		
	EP18		6.12E-05 g/m/s (mitigated)	
	EP19		5.44E-05 g/m/s (mitigated)	
	EP20		2.31E-05 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W	3.23 g/VKT 12 g/m ² 14 tons 15 tons 12 tons	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer
		TSP emission factor, E	457 g/VKT 491 g/VKT 391 g/VKT	
		No. of operation hour	12 hr	
		% of dust suppression	97.5 %	
	Source ID:	Sum of Emission Rate		

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2016

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
	Source ID: EP21 EP22 EP23	No. of operation hour % of dust suppression Sum of Emission Rate	12 hr 99.0 % 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated)	From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E Mitigation efficiency Emission Rate	272000 kg/h 272 Mg/h 0.74 2 % 3.5 m/s 0.002165163 kg/Mg 0.588924442 kg/hr 99 % 1.64E-03 g/s (mitigated)	Extracted from SP License of Express Rail Link (Appendix C). For TSP, AP-42, section 13.2.4, 11/06 ed. Extracted from SP License of Express Rail Link (Appendix C). PATH Year 2010 mean wind speed $E=k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.) Extracted from SP License of Express Rail Link (Appendix C).
West Kowloon Terminus Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8 PFA weight Hopper Source ID: EP3-EP4	TSP emission factor Dust extraction flow rate for each mixer No. of operation hour No. of small cement silos Emission height Emission Rate Production rate Density Emission Factor Emission Rate	30 mg/m3 1300 m3/hr 12 hr 4 21 or 22 1.08E-02 g/s (mitigated) 160 m3/hr 0.001989 mg/m3 2.60E-03 kg/Mg 2.30E-04 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor Dust extraction flow rate for each No. of operation hour No. of small cement silos Emission height Emission Rate	40 mg/m3 1500 m3/hr 12 hr 2 13 1.67E-02 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00
West Kowloon Cultural District	Heavy construction Source ID: zone 1: F36 Wind Erosion Source ID: zone 1: F36	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate Percentage active area, p Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated) 1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 $=2.69 \times 1000000 / (10000 \times d \times h \times 60 \times 60) \times p / 100$ AP42, Table 11.9-4 $=0.85 \times 1000000 / (10000 \times 365 \times 24 \times 60 \times 60) \times p / 100$

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2017

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
West Kowloon Cultural District	Heavy construction Source ID: Zone 2a: H27-H30	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	3 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 7.18483E-06 g/m ² /s (unmitigated) 5.96341E-07 g/m ² /s (mitigated)	Assume 3% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Zone 2a: H27-H30	Percentage active area, p Emission Factor Emission Rate	3 % 0.85 Mg/hectare/year 8.086E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: H21-H26	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: H21-H26	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 3: H31-H34	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-07 g/m ² /s (unmitigated) 3.97561E-08 g/m ² /s (mitigated)	Assume 0.2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 3: H31-H34	Percentage active area, p Emission Factor Emission Rate	0.2 % 0.85 Mg/hectare/year 5.39066E-09 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 4: H9-H12, H35	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	4 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 9.57977E-06 g/m ² /s (unmitigated) 7.95121E-07 g/m ² /s (mitigated)	Assume 4% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 4: H9-H12, H35	Percentage active area, p Emission Factor Emission Rate	4 % 0.85 Mg/hectare/year 1.07813E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 5: H3, H17, H20	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-06 g/m ² /s (unmitigated) 3.97561E-07 g/m ² /s (mitigated)	Assume 2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 5: H3, H17, H20	Percentage active area, p Emission Factor Emission Rate	2 % 0.85 Mg/hectare/year 5.39066E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: H1-H2, H4-H8, H13-H16, H18-H19, H36-H45	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-06 g/m ² /s (unmitigated) 3.97561E-07 g/m ² /s (mitigated)	Assume 2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: H1-H2, H4-H8, H13-H16, H18-H19, H36-H45	Percentage active area, p Emission Factor Emission Rate	2 % 0.85 Mg/hectare/year 5.39066E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: HB1-HB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: HB1-HB5	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W No. of truck trips per day	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 12 veh/hr 2 veh/hr	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer Aggregate Tipper Truck Cement Tanker

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2017

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks
	Source ID: CBH1-CBH4	No. of operation hour % of dust suppression Sum of Emission Rate 1.63E-04 g/m/s (mitigated)	6 veh/hr 12 hr 97.5 % Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: EP14 EP15 EP16 EP17	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate Sum of Emission Rate 8.36E-06 g/m/s (mitigated) 4.00E-05 g/m/s (mitigated) 1.70E-05 g/m/s (mitigated) 8.52E-06 g/m/s (mitigated)	3.23 g/VKT 12 g/m2 36 tons 45 tons 30.8 tons 1199 g/VKT 1505 g/VKT 1022 g/VKT 0 veh/hr 2 veh/hr 0 veh/hr 12 hr 99.0 % 0.00E+00 g/m/s (mitigated) 8.36E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 8.36E-06 g/m/s (mitigated) 4.00E-05 g/m/s (mitigated) 1.70E-05 g/m/s (mitigated) 8.52E-06 g/m/s (mitigated) All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle Source ID: CBX1-CBX4	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate 6.12E-05 g/m/s (mitigated)	3.23 g/VKT 12 g/m2 14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 12 hr 97.5 % 6.12E-05 g/m/s (mitigated) All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle Source ID: EP21 EP22 EP23	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate Sum of Emission Rate 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated)	3.23 g/VKT 12 g/m2 14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 0 veh/hr 2 veh/hr 0 veh/hr 12 hr 99.0 % 0.00E+00 g/m/s (mitigated) 2.73E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated) All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer Extracted from Specified Processes License (checked on 13 Jan 2012) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9	Consumption Rate Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E Mitigation efficiency Emission Rate 1.64E-03 g/s (mitigated)	272000 kg/h 272 Mg/h 0.74 2 % 3.5 m/s 0.002165163 kg/Mg 0.588924442 kg/hr 99 % 1.64E-03 g/s (mitigated) Extracted from SP License of Express Rail Link (Appendix C). For TSP, AP-42, section 13.2.4, 11/06 ed. Extracted from SP License of Express Rail Link (Appendix C). PATH Year 2010 mean wind speed E=k x (0.0016) x ((U/2.2) ^{1.3} /(M/2) ^{1.4}) (AP-42, section 13.2.4, 11/06 ed.) Extracted from SP License of Express Rail Link (Appendix C).

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2017

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks	
West Kowloon Terminus Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor	30	mg/m ³	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m
		Dust extraction flow rate for each mixer	1300	m ³ /hr	
		No. of operation hour	12	hr	
		No. of small cement silos	4		
		Emission height	21 or 22		
		Emission Rate	1.08E-02	g/s (mitigated)	
	PFA weight Hopper Source ID: EP3-EP4	Production rate	160	m ³ /hr	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
		Density	0.001989	mg/m ³	
		Emission Factor	2.60E-03	kg/Mg	
		Emission Rate	2.30E-04	g/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor	40	mg/m ³	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00
		Dust extraction flow rate for each mixer	1500	m ³ /hr	
		No. of operation hour	12	hr	
		No. of small cement silos	2		
		Emission height	13		
		Emission Rate	1.67E-02	g/s (mitigated)	

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2018

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: zone 2a: I25	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	6% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 1.43697E-05 g/m ² /s (unmitigated) 1.19268E-06 g/m ² /s (mitigated)	Assume 6% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2a: I25	Percentage active area, p Emission Factor Emission Rate	6% 0.85 Mg/hectare/year 1.6172E-07 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: I22-I24	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: I22-I24	Percentage active area, p Emission Factor Emission Rate	1% 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 4: I10-I12	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	2% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-06 g/m ² /s (unmitigated) 3.97561E-07 g/m ² /s (mitigated)	Assume 2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 4: I10-I12	Percentage active area, p Emission Factor Emission Rate	2% 0.85 Mg/hectare/year 5.39066E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 5: I3, I18, I21	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 5: I3, I18, I21	Percentage active area, p Emission Factor Emission Rate	1% 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: I1-I2, I4-I9, I13-I17, I19-I20	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	2% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-06 g/m ² /s (unmitigated) 3.97561E-07 g/m ² /s (mitigated)	Assume 2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: I1-I2, I4-I9, I13-I17, I19-I20	Percentage active area, p Emission Factor Emission Rate	2% 0.85 Mg/hectare/year 5.39066E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: IB3-IB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100% 91.7% 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: IB3-IB5	Percentage active area, p Emission Factor Emission Rate	100% 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: CBH1-CBH4	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W No. of truck trips per day No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 12 veh/hr 2 veh/hr 6 veh/hr 12 hr 97.5% 1.63E-04 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 1199 g/VKT 1505 g/VKT 1022 g/VKT 0 veh/hr	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer Aggregate Tpper Truck

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2018

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks
		2 veh/hr 0 veh/hr 12 hr 99.0 % 0.00E+00 g/m/s (mitigated) 8.36E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated)	Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
	Source ID: EP14 EP15 EP16 EP17	Sum of Emission Rate 8.36E-06 g/m/s (mitigated) 4.00E-05 g/m/s (mitigated) 1.70E-05 g/m/s (mitigated) 8.52E-06 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
	Source ID: CBX1-CBX4	 6.12E-05 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer Extracted from Specified Processes License (checked on 13 Jan 2012) Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
	Source ID: EP21 EP22 EP23	Sum of Emission Rate 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9	Consumption Rate Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E Mitigation efficiency Emission Rate	272000 kg/h 272 Mg/h 0.74 2 % 3.5 m/s 0.002165163 kg/Mg 0.588924442 kg/hr 99 % 1.64E-03 g/s (mitigated)
	Source ID: EP5-EP8	TSP emission factor Dust extraction flow rate for each mixer No. of operation hour No. of small cement silos Emission height Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m
	Source ID: EP3-EP4	PFA weight Hopper Production rate Density Emission Factor Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor Dust extraction flow rate for each No. of operation hour No. of small cement silos Emission height	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2018

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
West Kowloon Cultural District	Heavy construction Source ID: zone 3: I26-I29	Emission Rate	1.67E-02 g/s (mitigated)	Assume 0% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
		Percentage active area, p	0 %	
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	26 days	
		No. of working hours per day, h	12 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	
		Emission Rate	0 g/m ² /s (unmitigated) 0 g/m ² /s (mitigated)	
	Wind Erosion Source ID: zone 1: I26-I29	Percentage active area, p	0 %	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
		Emission Factor	0.85 Mg/hectare/year	
		Emission Rate	0 g/m ² /s	

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2019

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: J22-J24	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 5% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: J22-J24	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 4: J10-J12 JB3-JB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-06 g/m ² /s (unmitigated) 3.97561E-07 g/m ² /s (mitigated)	Assume 2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 4: J10-J12 JB3-JB5	Percentage active area, p Emission Factor Emission Rate	2 % 0.85 Mg/hectare/year 5.39066E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 5: J3, J18, J21	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.4 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 9.57977E-07 g/m ² /s (unmitigated) 7.95121E-08 g/m ² /s (mitigated)	Assume 0.4% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 5: J3, J18, J21	Percentage active area, p Emission Factor Emission Rate	0.4 % 0.85 Mg/hectare/year 1.07813E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: Great Park: J1-J2, J4-J9, J13-J17, J19, J20	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: Great Park: J1-J2, J4-J9, J13-J17, J19,	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: JB1-JB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: JB1-JB5	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: CBH1-CBH4	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W No. of truck trips per day No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 12 veh/hr 2 veh/hr 6 veh/hr 12 hr 97.5 % 1.63E-04 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 1199 g/VKT 1505 g/VKT 1022 g/VKT 0 veh/hr 2 veh/hr 0 veh/hr 12 hr 99.0 % 0.00E+00 g/m/s (mitigated) 8.36E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL) ^{0.91} x (W) ^{1.02} (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2019

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
	Source ID: EP14 EP15 EP16 EP17	Sum of Emission Rate	8.36E-06 g/m/s (mitigated) 4.00E-05 g/m/s (mitigated) 1.70E-05 g/m/s (mitigated) 8.52E-06 g/m/s (mitigated)	Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle Source ID: CBX1-CBX4	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m2 14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 12 hr 97.5 % 6.12E-05 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL)^0.91 x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle Source ID: EP21 EP22 EP23	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate Sum of Emission Rate	3.23 g/VKT 12 g/m2 14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 0 veh/hr 2 veh/hr 0 veh/hr 12 hr 99.0 % 0.00E+00 g/m/s (mitigated) 2.73E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer E=k x (sL)^0.91 x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer Extracted from Specified Processes License (checked on 13 Jan 2012) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9	Consumption Rate Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E Mitigation efficiency Emission Rate	272000 kg/h 272 Mg/h 0.74 2 % 3.5 m/s 0.002165163 kg/Mg 0.588924442 kg/hr 99 % 1.64E-03 g/s (mitigated)	Extracted from SP License of Express Rail Link (Appendix C). For TSP, AP-42, section 13.2.4, 11/06 ed. Extracted from SP License of Express Rail Link (Appendix C). PATH Year 2010 mean wind speed E=k x (0.0016) x ((U/2.2)^1.3/(M/2)^1.4) (AP-42, section 13.2.4, 11/06 ed.) Extracted from SP License of Express Rail Link (Appendix C).
West Kowloon Terminus Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8 PFA weight Hopper Source ID: EP3-EP4	TSP emission factor Dust extraction flow rate for each mixer No. of operation hour No. of small cement silos Emission height Emission Rate Production rate Density Emission Factor Emission Rate	30 mg/m3 1300 m3/hr 12 hr 4 21 or 22 1.08E-02 g/s (mitigated) 160 m3/hr 0.001989 mg/m3 2.60E-03 kg/Mg 2.30E-04 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
West Kowloon Terminus Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor Dust extraction flow rate for each No. of operation hour No. of small cement silos Emission height Emission Rate	40 mg/m3 1500 m3/hr 12 hr 2 13 1.67E-02 g/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2020

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
West Kowloon Cultural District	Heavy construction Source ID: zone 2b: K4-K6, K11 K12	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	1 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.39494E-06 g/m ² /s (unmitigated) 1.9878E-07 g/m ² /s (mitigated)	Assume 1% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 2b: K4-K6, K11 K12	Percentage active area, p Emission Factor Emission Rate	1 % 0.85 Mg/hectare/year 2.69533E-08 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 4: K7-K10	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.3 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 7.18483E-07 g/m ² /s (unmitigated) 5.96341E-08 g/m ² /s (mitigated)	Assume 0.3% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 4: K7-K10	Percentage active area, p Emission Factor Emission Rate	0.3 % 0.85 Mg/hectare/year 8.086E-09 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: zone 5: K1-K3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	0.2 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 4.78989E-07 g/m ² /s (unmitigated) 3.97561E-08 g/m ² /s (mitigated)	Assume 0.2% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: zone 5: K1-K3	Percentage active area, p Emission Factor Emission Rate	0.2 % 0.85 Mg/hectare/year 5.39066E-09 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District	Heavy construction Source ID: KB3-KB5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100 % 91.7 % 26 days 12 hour 2.69 Mg/hectare/month of activity 0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	Assume 100% works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: KB3-KB5	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.69533E-06 g/m ² /s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: CBH1-CBH4	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W No. of truck trips per day No. of operation hour % of dust suppression Sum of Emission Rate	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 12 veh/hr 2 veh/hr 6 veh/hr 12 hr 97.5 % 1.63E-04 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Laden Vehicle Source ID: EP14 EP15 EP16	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E No. of truck trips per day No. of operation hour % of dust suppression Emission Rate Sum of Emission Rate	3.23 g/VKT 12 g/m ² 36 tons 45 tons 30.8 tons 1199 g/VKT 1505 g/VKT 1022 g/VKT 0 veh/hr 2 veh/hr 0 veh/hr 12 hr 99.0 % 0.00E+00 g/m/s (mitigated) 8.36E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) 8.36E-06 g/m/s (mitigated) 4.00E-05 g/m/s (mitigated) 1.70E-05 g/m/s (mitigated)	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Full loading of Aggregate Tipper Truck Full loading of Cement Tanker Full loading of Concrete Mixer E=k x (sL)^0.91x (W)^1.02 (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tipper Truck Cement Tanker Concrete Mixer Aggregate Tipper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 6 veh/hr respectively.

Appendix 3.3 - Details of Dust Emission Sources for Annual TSP Assessment at Year 2020

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks
	EP17	8.52E-06 g/m/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Cultural District Concrete Batching Plant (Construction Site)	Paved haul road outside concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00
	Source ID: CBX1-CBX4	12 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT 12 hr 97.5 % Sum of Emission Rate	Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.
West Kowloon Terminus Concrete Batching Plant (Construction Site)	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k Road surface silt loading, sL Average truck weight, W TSP emission factor, E	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed. AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed. Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Aggregate Tpper Truck Cement Tanker Concrete Mixer
	Source ID: EP21 EP22 EP23	14 tons 15 tons 12 tons 457 g/VKT 491 g/VKT 391 g/VKT No. of truck trips per day 0 veh/hr 2 veh/hr 0 veh/hr 12 hr 99.0 % Emission Rate 0.00E+00 g/m/s (mitigated) 2.73E-06 g/m/s (mitigated) 0.00E+00 g/m/s (mitigated) Sum of Emission Rate 2.73E-06 g/m/s (mitigated) 1.52E-05 g/m/s (mitigated) 3.26E-06 g/m/s (mitigated)	Extracted from Specified Processes License (checked on 13 Jan 2012) Aggregate Tpper Truck Cement Tanker Concrete Mixer From 7:00-19:00 Aggregate Tipper Truck Cement Tanker Concrete Mixer Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively. No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.
West Kowloon Cultural District Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9	Consumption Rate 272000 kg/h 272 Mg/h Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E 0.002165163 kg/Mg Mitigation efficiency 99 % Emission Rate 0.588924442 kg/hr 1.64E-03 g/s (mitigated)	Extracted from SP License of Express Rail Link (Appendix C). For TSP, AP-42, section 13.2.4, 11/06 ed. Extracted from SP License of Express Rail Link (Appendix C). PATH Year 2010 mean wind speed $E=k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.) Extracted from SP License of Express Rail Link (Appendix C).
West Kowloon Cultural District Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor Dust extraction flow rate for each mixer No. of operation hour No. of small cement silos Emission height Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00 EP5: 21m, EP6-EP8: 22m
	PFA weight Hopper Source ID: EP3-EP4	Production rate Density Emission Factor Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). Weight hopper loading, AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
West Kowloon Cultural District Concrete Batching Plant (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor Dust extraction flow rate for each No. of operation hour No. of small cement silos Emission height Emission Rate	All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00