

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2013

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: B1-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)*p/100
	Wind Erosion Source ID: B1-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)*p/100

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

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/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) ^{0.91} 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/m ²	
		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: HR7A1, HR7B-C		1.93E-04 g/m/s (mitigated)		
HR8A-B		3.86E-04 g/m/s (mitigated)		
HR9		3.09E-04 g/m/s (mitigated)		
HR10A-C		2.32E-04 g/m/s (mitigated)		
HR11		1.54E-04 g/m/s (mitigated)		
HR12A		7.72E-05 g/m/s (mitigated)		
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	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 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.
		Road surface silt loading, sL	12 g/m ²	
		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: 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	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 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.
		Road surface silt loading, sL	12 g/m ²	
		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: 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)		

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

Concurrent Projects - at Year 2013

Description	Sources	Parameter	Emission Rate	Remarks
West Kowloon Terminus Concrete Batching Plant	Paved haul road outside concrete batching plant - For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	<p>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</p> <p>Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.</p>
		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	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	Paved haul road within concrete batching plant - For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	<p>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</p> <p>Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 0 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.</p>
		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	<p>Extracted from SP License of Express Rail Link (Appendix C).</p> <p>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.)</p> <p>Extracted from SP License of Express Rail Link (Appendix C).</p>
			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	
		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	<p>All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00</p> <p>EP5: 21m, EP6-EP8: 22m</p>
		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	<p>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.</p>
		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	<p>All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C). From 7:00 to 19:00</p>
		Dust extraction flow rate for	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 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2014

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: C1-C10, C14-C18, C26-C29, C32-C33, C37, C39, C41-C42, C45-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)*p/100
	Wind Erosion Source ID: C1-C10, C14-C18, C26-C29, C32-C33, C37, C39, C41-C42, C45-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)*p/100

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

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) ^{0.91} 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 %			
Source ID:						
HR7A2, HR7B-C		1.93E-04 g/m/s (mitigated)				
HR8A-B		3.86E-04 g/m/s (mitigated)				
HR9		3.09E-04 g/m/s (mitigated)				
HR10A-C		2.32E-04 g/m/s (mitigated)				
HR11		1.54E-04 g/m/s (mitigated)				
HR12A		7.72E-05 g/m/s (mitigated)				
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 - Phase 1	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				
		Source ID:				
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 - Phase 1	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				
		Source ID:				
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)				

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate	Remarks
West Kowloon Terminus Concrete Batching Plant - Phase 1	Paved haul road outside concrete batching plant - Phase 1 For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	<p>All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C).</p> <p>AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.</p> <p>AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.</p> <p>Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer</p> <p>$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)</p> <p>Aggregate Tipper Truck Cement Tanker Concrete Mixer</p> <p>From 7:00-19:00</p> <p>Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 2, and 6 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 6 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 6 veh/hr respectively.</p>
		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	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 - Phase 1	Paved haul road within concrete batching plant - Phase 1 For Unladen Vehicle	Particle size multiplier, k	3.23 g/VKT	<p>All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C).</p> <p>AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.</p> <p>AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.</p> <p>Unladen weight of Aggregate Tipper Truck Unladen weight of Cement Tanker Unladen weight of Concrete Mixer</p> <p>$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)</p> <p>Aggregate Tipper Truck Cement Tanker Concrete Mixer</p> <p>From 7:00-19:00</p> <p>Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 0 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 12, 0, and 0 veh/hr respectively.</p> <p>No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 3 veh/hr respectively.</p>
		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 - Phase 1 (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate	272000 kg/h 272 Mg/h	<p>Extracted from SP License of Express Rail Link (Appendix C).</p> <p>For TSP, AP-42, section 13.2.4, 11/06 ed.</p> <p>Extracted from Specified Processes License (checked on 13 Jan 2012)</p> <p>PATH year 2010 mean wind speed</p> <p>$E=k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)</p> <p>Extracted from Specified Processes License (checked on 13 Jan 2012)</p>
		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 - Phase 1 (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor	30 mg/m ³	<p>All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C).</p> <p>From 7:00 to 19:00</p> <p>EP5: 21m, EP6-EP8: 22m</p>
		Dust extraction flow rate for each mixer	1300 m ³ /hr	
		No. of operation hour	12 hr	
		No. of small cement silos	4	
	PFA weight Hopper Source ID: EP3-EP4	Emission height	21 or 22	
		Emission Rate	1.08E-02 g/s (mitigated)	
		Production rate	160 m ³ /hr	
		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 - Phase 1 (Mixing Tower)	Mixer Source ID: EP1-EP2	TSP emission factor	40 mg/m ³	<p>All calculations and assumptions are extracted from SP License of Express Rail Link (Appendix C).</p> <p>From 7:00 to 19:00</p> <p>Extracted from Specified Processes License (checked on 13 Jan 2012)</p>
		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 - Phase 2 Toward CBP	Particle size multiplier, k	3.23 g/VKT	<p>All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1).</p> <p>AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.</p> <p>AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.</p> <p>Aggregate Tipper Truck (Laden) Cement Tanker (Laden) Concrete Mixer Truck (Unladen)</p> <p>$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)</p> <p>Aggregate Tipper Truck Cement Tanker Concrete Mixer</p> <p>From 7:00-19:00</p> <p>Sum of emission rate of aggregate tipper truck, cement tanker and concrete mixer are 10, 0, and 10 veh/hr respectively.</p>
		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 operation hour	12 hr	
		% of dust suppression	91.0 %	
Source ID:	Sum of Emission Rate			
AEP 1		1.41E-04 g/m ² /s (mitigated)		

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate		Remarks
	AEP 2		5.99E-05	g/m2/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 2, and 10 veh/hr respectively.
	AEP 3		1.65E-04	g/m2/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 10, 2, and 10 veh/hr respectively.
	AEP 6		3.53E-05	g/m2/s (mitigated)	No. of vehicle of aggregate tipper truck, cement tanker and concrete mixer are 0, 0, and 10 veh/hr respectively.
	AEP 8		1.06E-04	g/m2/s (mitigated)	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 - Toward CBP	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 12 38 44 13 1267 1471 424 12 100.0	g/VKT g/m2 tons tons tons g/VKT g/VKT g/VKT hr %	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 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 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 - Leave CBP	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 12 18 14 30 591 457 995 12 91.0	g/VKT g/m2 tons tons tons g/VKT g/VKT g/VKT hr %	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 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 0, 0, 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 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 - Toward CBP	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 12 38 44 13 1267 1471 424 12 100.0	g/VKT g/m2 tons tons tons g/VKT g/VKT g/VKT hr %	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 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 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	210000 210 0.74 2 3.5 0.002165163 0.454684312 50 5.5	kg/h Mg/h % m/s kg/Mg kg/hr % m	All calculations and assumptions are extracted from Environmental Review report (v. 2012Oct) of Express Rail Link VEP (Appendix C1). 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 x (0.0016) x ((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).

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

Concurrent Projects - at Year 2014

Description	Sources	Parameter	Emission Rate	Remarks
		Emission Rate	6.32E-02 g/s (mitigated)	
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)	
West Kowloon Highway Scheme HIJ				
West Kowloon Highway Scheme HIJ	Heavy construction Source ID: AA9-12	--	2.99368E-05 g/m ² /s (mitigated)	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.1), assume 100% active area
	Wind Erosion Source ID: AA9-12	--	2.69533E-06 g/m ² /s	
West Kowloon Highway Scheme Q (Interim)	Heavy construction Source ID: FF1-FF9	--	2.99368E-05 g/m ² /s (mitigated)	Extract from PER report of Scheme Q (Appendix 3.2), assume 100% active area
	Wind Erosion Source ID: FF1-FF9	--	2.69533E-06 g/m ² /s	

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2015

West Kowloon Cultural District

Works Area	Sources	Parameter	Parameter	Remarks
West Kowloon Cultural District	Heavy construction Source ID: E1-E61, 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/m²/s (unmitigated) 1.9878E-05 g/m²/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: E1-E61, EB1-EB5	Percentage active area, p Emission Factor Emission Rate	100% 0.85 Mg/hectare/year 2.69533E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
West Kowloon Cultural District Barging Point (Construction Site)	Haul road to barging points Source ID: HR7A3, HR7B, HR7C1, HR8A-B HR9 HR10A-C HR11 HR12A	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/m2 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% 4.75E-14 g/m/s (mitigated) 9.49E-14 g/m/s (mitigated) 7.59E-14 g/m/s (mitigated) 5.70E-14 g/m/s (mitigated) 3.80E-14 g/m/s (mitigated) 1.90E-14 g/m/s (mitigated)	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)
West Kowloon Cultural District Barging Point	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 Cultural District 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 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.
West Kowloon Cultural District Concrete Batching Plant (Construction Site)	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 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.

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2015

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District 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 $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (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. 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/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	97.5 %	
Sum of Emission Rate				
Source ID:				
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 Cultural District 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 $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (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.
		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 %	
Sum of Emission Rate				
Source ID:				
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 Cultural District Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate	272000 kg/h 272 Mg/h	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)
		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 Cultural District 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	
	PFA weight Hopper Source ID: EP3-EP4	No. of small cement silos	4	
		Emission height	21 or 22	
		Emission Rate	1.08E-02 g/s (mitigated)	
Mixer Source ID: EP1-EP2	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 Cultural District 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)			

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1)

Concurrent Projects - at Year 2015

Description	Sources	Parameter	Emission Rate	Remarks
West Kowloon Highway Scheme HIJ	Heavy construction Source ID: AA9-12	--	2.99368E-05 g/m ² /s (mitigated)	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.1), assume 100% active area
	Wind Erosion Source ID: AA9-12	--	2.69533E-06 g/m ² /s	Extract from PER report of Scheme HIJ and Junction JRD/FST/CRD (Appendix 3.1), assume 100% active area
West Kowloon Highway Scheme Q (Interim)	Heavy construction Source ID: FF1-FF9	--	2.99368E-05 g/m ² /s (mitigated)	Extract from PER report of Scheme Q (Appendix 3.2), assume 100% active area
	Wind Erosion Source ID: FF1-FF9	--	2.69533E-06 g/m ² /s	Extract from PER report of Scheme Q (Appendix 3.2), assume 100% active area

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2016

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: F1-F36, 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: F1-F36, 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
West Kowloon Cultural District Barging Point (Construction Site)	Haul road to barging points Source ID: HR7A-C HR8A-B HR9 HR10A-C HR11 HR12A	Particle size multiplier, k Road surface silt loading, sL	3.23 g/VKT 8.2 g/m ²	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) ^{0.91} 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)
		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	4.75E-14 g/m/s (mitigated)	
			9.49E-14 g/m/s (mitigated)	
			7.59E-14 g/m/s (mitigated)	
			5.70E-14 g/m/s (mitigated)	
	3.80E-14 g/m/s (mitigated)			
	1.90E-14 g/m/s (mitigated)			
West Kowloon Cultural District Barging Point	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 Cultural District 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	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 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.
		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 %	
		Sum of Emission Rate	1.63E-04 g/m/s (mitigated)	
	1.42E-04 g/m/s (mitigated)			
	6.35E-05 g/m/s (mitigated)			
West Kowloon Cultural District Terminus Concrete Batching Plant (Construction Site)	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	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 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.
		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)	
			4.00E-05 g/m/s (mitigated)	
			1.70E-05 g/m/s (mitigated)	
	8.52E-06 g/m/s (mitigated)			

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2016

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District 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 $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (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. 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/m ²	
		Average truck weight, W	14 tons	
			15 tons	
			12 tons	
		TSP emission factor, E	457 g/VKT	
Source ID:	No. of operation hour	12 hr		
	% of dust suppression	97.5 %		
	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 Cultural District 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 $E=k \times (sL)^{0.91} \times (W)^{1.02}$ (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.
		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	
Source ID:	No. of operation hour	12 hr		
	% of dust suppression	99.0 %		
	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 Cultural District Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: EP9-EP10	Consumption Rate	272000 kg/h	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).
			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	
Mitigation efficiency	99 %			
	Emission Rate	1.64E-03 g/s (mitigated)		
	West Kowloon Cultural District Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: EP5-EP8	TSP emission factor	30 mg/m ³
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 Cultural District 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	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 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2017

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: H1-H45, 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: H1-H45, 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 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 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	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) 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.

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2017

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District 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/m ² 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	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/m ² 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 Cultural District 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 Cultural District 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/m ³ 1300 m ³ /hr 12 hr 4 21 or 22 1.08E-02 g/s (mitigated) 160 m ³ /hr 0.001989 mg/m ³ 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 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	40 mg/m ³ 1500 m ³ /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 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2018

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: I1-I29, IB3-IB5	Percentage active area, p	100 %	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
		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	0.000239494 g/m ² /s (unmitigated) 1.9878E-05 g/m ² /s (mitigated)	
	Wind Erosion Source ID: I1-I29, IB3-IB5	Percentage active area, p	100 %	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
		Emission Factor	0.85 Mg/hectare/year	
		Emission Rate	2.69533E-06 g/m ² /s	
West Kowloon Cultural District 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 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.
		Road surface silt loading, sL	12 g/m ²	
		Average truck weight, W	36 tons	
			45 tons	
			30.8 tons	
		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: CBH1-CBH4	Sum of Emission Rate	1.63E-04 g/m/s (mitigated)	
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 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.
		Road surface silt loading, sL	12 g/m ²	
		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 truck trips per day	0 veh/hr	
			2 veh/hr	
			0 veh/hr	
		No. of operation hour	12 hr	
		% of dust suppression	99.0 %	
		Emission Rate	0.00E+00 g/m/s (mitigated)	
			8.36E-06 g/m/s (mitigated)	
			0.00E+00 g/m/s (mitigated)	
	Source ID: EP14	Sum of Emission Rate	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 Cultural District 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.) 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.
		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	97.5 %	
	Source ID: CBX1-CBX4	Sum of Emission Rate	6.12E-05 g/m/s (mitigated)	
West Kowloon Terminus Concrete Batching Plant	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 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
		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 truck trips per day	0 veh/hr	
			2 veh/hr	
			0 veh/hr	
		No. of operation hour	12 hr	
		% of dust suppression	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)	

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2018

West Kowloon Cultural District

Works Area	Sources	Parameter		Remarks
	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)	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 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 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	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 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	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 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2019

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: J1-J24, 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	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: J1-J24, JB3-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 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 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	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) 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.

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2019

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District 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/m ² 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	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/m ² 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 Cultural District 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 Cultural District 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/m ³ 1300 m ³ /hr 12 hr 4 21 or 22 1.08E-02 g/s (mitigated) 160 m ³ /hr 0.001989 mg/m ³ 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 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	40 mg/m ³ 1500 m ³ /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 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2020

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks	
West Kowloon Cultural District	Heavy construction Source ID: K1-K12, 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: K1-K12, 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 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	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) 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.

Appendix 3.1 - Details of Dust Emission Sources for 1-hour and Daily TSP Assessment (Tier 1) at Year 2020

West Kowloon Cultural District

Works Area	Sources	Parameter	Remarks
West Kowloon Cultural District 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 % 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 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) 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 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)
West Kowloon Cultural District 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)
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	40 mg/m3 1500 m3/hr 12 hr 2 13 1.67E-02 g/s (mitigated)