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**Appendix 3.1**

**Details of Dust Emission Sources and  
Calculations**

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## Calculation of Emission Factor

### **Heavy Construction:**

Emission Factor ( E ) = 1.2 tons/arce/month activity (ref: USEPA AP-42 S13.2.3.3)  
2.69 Mg/hectare/month activity

### Unmitigated

Active operating area (%): 100% 100% for worst case scenario  
Mitigation Efficiency(%): 0% Unmitigation Scenario  
E (g/m<sup>2</sup>/day) 10.34615385 Assume 26 working days per month  
E (g/m<sup>2</sup>/s) 0.000239494 Assume 12 working hourse a day

### Mitigated (Working Hours)

Active operating area (%): 100% 100% for worst case scenario  
Mitigation Efficiency(%): 91.7% Unmitigation Scenario  
E (g/m<sup>2</sup>/day) 0.858730769 Assume 26 working days per month  
E (g/m<sup>2</sup>/s) 0.000019878 Assume 12 working hourse a day

### **Wind Erosion**

Emission Factor ( E ) = 0.85 Mg/hectare/year (ref: USEPA AP-42 S11.9, Table 11.9.4)  
0.2329 g/m<sup>2</sup>/day

### Unmitigated

Active operating area (%): 100% 100% for worst case scenario  
Mitigation Efficiency(%): 0% Unmitigation Scenario  
E (g/m<sup>2</sup>/day) 0.009703196  
E (g/m<sup>2</sup>/s) 0.000002695

### Mitigated (Working Hours)

Active operating area (%): 100% 100% for worst case scenario  
Mitigation Efficiency(%): 91.7% Unmitigation Scenario  
E (g/m<sup>2</sup>/day) 0.000805365 Assume 26 working days per month  
E (g/m<sup>2</sup>/s) 0.000000019 Assume 12 working hourse a day

$$\text{Emission Factor ( E )} = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ kg/Mg}$$

where

E Emission Factor in kg/Mg (ref: USEPA AP42 S13.2.4)

k 0.74 Particle size Multiplier (ref: S13.2.4, Table 2)

U (m/s) 2.861 Average wind speed from MM5 Data

M (%) 2.0 Material Moisture Content

Based on the GI sampling results listed in Appendix 4.1 of CKR EIA

$$\text{Emission Factor ( E )} = \frac{0.74 \times (0.0016) \times (2.563/2.2)^{1.3} / (4.8/2)^{1.4}}{0.00167} \text{ kg/Mg}$$

No. of trucks loading/unloading at each barging point 2.25 per hour

Average carrying capacity for each truck 15 tonne

Quantity of excavated materials loading at Stockpile

34 Mg/hour

Mitigation Efficiency(%): 50.00% 3-side with top cover and water spraying system to be provided

#### Mitigated (Working Hours)

$$\text{Emission Rate} = 0.00205 \times 110 \times (1-0.5)$$

0.02811 kg/hour  
0.00781 g/s

#### Unmitigated (Working Hours)

$$\text{Emission Rate} = 0.00205 \times 110$$

0.05622 kg/hour  
0.01562 g/s

**Calculation of dust removal efficiency with different watering interval time**

The removal efficiency is estimated based on USEPA Control of Open Fugitive Dust Sources (EPA-450/3-88-008)

$$C = 100 - (0.8 * p * d * t) / i$$

- where C average control efficiency, in percent
- p potential average hourly daytime evaporation rate, in mm/h
- d average hourly daytime traffic rate in vehicles per hour
- i application intensity in litre/m<sup>2</sup>
- t time between applications in h

Obtained from Hong Kong Observatory website, the total annual evaporation recorded in Hong Kong averaged from 1981-2010 is 1227.3 mm ( 35.92 inches).  
[http://www.weather.gov.hk/cis/normal/1981\\_2010/normals\\_e.htm](http://www.weather.gov.hk/cis/normal/1981_2010/normals_e.htm)

- p 0.233500589 mm/h (0.0065\*annual evaporation in inches)
- d 21 per hour Peak hourly daytime traffic is used for conservative approach
- i 0.473 litre/m<sup>2</sup> Minimum application intensity and that requirement would be stated in the tender document

Time Between Applications (h)	Average Control Efficiency (%)
6	50.2
3	75.1
1	91.7

Details of Worksites for Fugitive Dust Assessment - Kai Tak Sport Complex (Unmitigated)

Source ID	Source Type	Coordinates of		Dimension (m)		Height (m)	Angle / Width (deg / m)	Emission Rate (g/s/sq.m)						Working Hour
		X1	Y1	X2	Y2			Heavy Construction		Stockpiling/Barging Point		Wind Erosion		
		(m)	(m)	(m)	(m)			Working Hours	Non-working Hours	Working Hours	Non-working Hours	Working Hours [1]	Non-working Hours [2]	
N-1	Area	838179	820722	549	108	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
N-2	Area	838382	820844	93	41	0.0	14.0	0.000239494				0.000002695	0.000002695	0700 - 1900
N-3	Area	838418	820784	133	93	0.0	14.0	0.000239494				0.000002695	0.000002695	0700 - 1900
N-4	Area	838320	820745	77	65	0.0	14.0	0.000239494				0.000002695	0.000002695	0700 - 1900
N-5	Area	838248	820717	76	49	0.0	14.0	0.000239494				0.000002695	0.000002695	0700 - 1900
N-6	Area	838139	820569	275	50	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
N-7	Area	838164	820524	242	48	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
N-8	Area	838381	820661	307	127	0.0	14.0	0.000239494				0.000002695	0.000002695	0700 - 1900
S-1	Area	838573	820544	63	156	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
S-2	Area	838531	820488	74	243	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
S-3	Area	838466	820447	76	266	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
S-4	Area	838397	820408	75	327	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
S-5	Area	838342	820355	73	368	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
S-6	Area	838296	820289	87	389	0.0	45.3	0.000239494				0.000002695	0.000002695	0700 - 1900
H-1	Area	838102	820394	31	5	0.0	57.0	0.000239494						0700 - 1900
H-2	Area	838423	820069	5	903	0.0	46.0	0.000239494						0700 - 1900

Details of Worksites for Fugitive Dust Assessment - Kai Tak Sport Complex (Mitigated)

Source ID	Source Type	Coordinates of		Dimension (m)		Height (m)	Angle / Width (deg / m)	Emission Rate (g/s/sq.m)						Working Hour
		X1	Y1	X2	Y2			Heavy Construction		Stockpiling/Barging Point		Wind Erosion		
		(m)	(m)	(m)	(m)			Working Hours	Non-working Hours	Working Hours	Non-working Hours	Working Hours [1]	Non-working Hours [2]	
N-1	Area	838179	820722	549	108	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
N-2	Area	838382	820844	93	41	0.0	14.0	0.000019878				0.000000224	0.000002695	0700 - 1900
N-3	Area	838418	820784	133	93	0.0	14.0	0.000019878				0.000000224	0.000002695	0700 - 1900
N-4	Area	838320	820745	77	65	0.0	14.0	0.000019878				0.000000224	0.000002695	0700 - 1900
N-5	Area	838248	820717	76	49	0.0	14.0	0.000019878				0.000000224	0.000002695	0700 - 1900
N-6	Area	838139	820569	275	50	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
N-7	Area	838164	820524	242	48	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
N-8	Area	838381	820661	307	127	0.0	14.0	0.000019878				0.000000224	0.000002695	0700 - 1900
S1-1	Area	838573	820544	63	156	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
S1-2	Area	838531	820488	74	243	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
S1-3	Area	838466	820447	76	266	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
S1-4	Area	838397	820408	75	327	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
S1-5	Area	838342	820355	73	368	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
S1-6	Area	838296	820289	87	389	0.0	45.3	0.000019878				0.000000224	0.000002695	0700 - 1900
H-1	Area	838102	820394	31	5	0.0	57.0	0.000019878						0700 - 1900
H-2	Area	838423	820069	5	903	0.0	46.0	0.000019878						0700 - 1900

Area Dust Sources for Concurrent Projects  
Short-term (1-hour & 24-hour) assessment - Mitigated

Projects & References	Sources/ Activities	Source ID	Source Type	Coordinates of		Dimensio		Height (m)	Angle / Width (deg / m)	Emission Rate (g/s/sq.m)						Working Hour
				X1	Y1	X2	Y2			Heavy Construction		Stockpiling		Wind Erosion		
				(m)	(m)	(m)	(m)			Working Hours	Non-working Hours	Working Hours	Non-working Hours	Working Hours [1]	Non-working Hours [2]	
P1	Tunnel Construction	1	Area	838456	820167	255	86	0.5	59	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	2	Area	838558	820308	99	100	0.5	40	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	3	Area	838707	820392	175	70	0.5	17	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	4	Area	838850	820399	50	112	0.5	83	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	5	Area	838836	820447	100	40	0.5	0	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	6	Area	838908	820529	130	27	0.5	66	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	8	Area	838967	820624	91	30	0.5	40	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	9	Area	838876	820707	34	74	0.5	30	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	10	Area	838900	820645	28	54	0.5	5	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	11	Area	838877	820537	158	37	0.5	66	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	12	Area	838945	820424	75	18	0.5	10	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Adminstration Buidling	13	Area	838737	820469	45	50	0.5	0	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	14	Area	838735	820506	10	102	0.5	81	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	15	Area	838651	820525	22	68	0.5	86	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Ventilation Building	16	Area	838673	820486	65	36	0.5	0	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	17	Area	838624	820459	10	112	0.5	0	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	18	Area	838668	820437	79	40	0.5	17	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	19	Area	838659	820309	80	60	0.5	16	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	22	Area	838976	820329	37	175	0.5	48	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	23	Area	838988	820400	18	95	0.5	73	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	24	Area	839057	820382	29	314	0.5	47	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	25	Area	839149	820149	44	324	0.5	43	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	At-grade construction	33	Area	838710	820468	9	74	0.5	0	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	34	Area	838121	819922	139	90	0.5	2	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	35	Area	838257	819952	139	90	0.5	27	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	36	Area	838351	820026	98	90	0.5	40	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	37	Area	837979	819870	25	100	0.5	49	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	38	Area	837955	819951	50	25	0.5	70	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	39	Area	837988	819946	60	40	0.5	70	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Tunnel Construction	40	Area	838025	819931	60	40	0.5	70	0.000019878				0.000000224	0.000002695	0700 - 1900
P2	Opening and Piled Deck	101	Area	838728	819899	250	232	0.5	45	0.000019878				0.000000224	0.000002695	0700 - 1900
P2	Opening and Piled Deck	102	Area	838569	819929	72	32	0.5	45	0.000019878				0.000000224	0.000002695	0700 - 1900
P2	Opening and Piled Deck	103	Area	838609	819986	60	63	0.5	45	0.000019878				0.000000224	0.000002695	0700 - 1900
P2	Opening and Piled Deck	104	Area	838643	820039	63	86	0.5	45	0.000019878				0.000000224	0.000002695	0700 - 1900
P2	Opening and Piled Deck	105	Area	838676	820086	51	109	0.5	45	0.000019878				0.000000224	0.000002695	0700 - 1900
P1	Stockpile	E-5P02	Area	838591	820107	95	55	0.5	49			0.000010015		0.000000224	0.000002695	0700 - 1900

SCL	Haul Road	401	Area	838683	820065	5	480	0.0	46	0.000017228						0700 - 1900
SCL	Haul Road	402	Area	838505	820241	5	22	0.0	25	0.000017228						0700 - 1900
SCL	Haul Road	403	Area	838500	820266	29	5	0.0	90	0.000017228						0700 - 1900
SCL	Haul Road	404	Area	838545	820405	266	5	0.0	70	0.000017228						0700 - 1900
SCL	Haul Road	405	Area	838571	820587	5	120	0.0	19	0.000017228						0700 - 1900
SCL	Haul Road	406	Area	838521	820702	5	131	0.0	28	0.000017228						0700 - 1900
SCL	Haul Road	407	Area	838478	820762	5	20	0.0	74	0.000017228						0700 - 1900
SCL	Haul Road	408	Area	838461	820772	5	21	0.0	41	0.000017228						0700 - 1900
SCL	Haul Road	409	Area	838454	820794	5	26	0.0	3	0.000017228						0700 - 1900
SCL	Haul Road	410	Area	838422	820842	5	94	0.0	41	0.000017228						0700 - 1900
SCL	Haul Road	411	Area	838386	820895	5	36	0.0	16	0.000017228						0700 - 1900
SCL	Haul Road	412	Area	838357	820937	5	69	0.0	44	0.000017228						0700 - 1900
SCL	Haul Road	413	Area	838327	820963	5	13	0.0	73	0.000017228						0700 - 1900
SCL	Haul Road	414	Area	838315	820964	13	5	0.0	14	0.000017228						0700 - 1900
SCL	Haul Road	415	Area	838294	820949	40	5	0.0	43	0.000017228						0700 - 1900
SCL	Haul Road	416	Area	838272	820935	15	5	0.0	4	0.000017228						0700 - 1900
SCL	Haul Road	417	Area	838230	820901	97	5	0.0	44	0.000017228						0700 - 1900
SCL	Haul Road	418	Area	838119	820834	166	5	0.0	24	0.000017228						0700 - 1900
SCL	Haul Road	419	Area	838025	820802	5	36	0.0	87	0.000017228						0700 - 1900
SCL	Haul Road	420	Area	837987	820785	51	5	0.0	42	0.000017228						0700 - 1900
SCL	Haul Road	421	Area	837873	820727	207	5	0.0	23	0.000017228						0700 - 1900
SCL	Haul Road	422	Area	837819	820654	5	96	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	423	Area	837817	820588	93	5	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	424	Area	837884	820855	5	238	0.0	46	0.000017228						0700 - 1900
SCL	Haul Road	425	Area	838347	820959	5	19	0.0	11	0.000017228						0700 - 1900
SCL	Haul Road	426	Area	838347	820975	14	5	0.0	77	0.000017228						0700 - 1900
SCL	Haul Road	427	Area	838425	821064	225	5	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	428	Area	838503	821151	10	5	0.0	74	0.000017228						0700 - 1900
SCL	Haul Road	429	Area	838503	821160	5	9	0.0	19	0.000017228						0700 - 1900
SCL	Haul Road	430	Area	838491	821175	5	30	0.0	43	0.000017228						0700 - 1900
SCL	Haul Road	431	Area	838481	821218	64	5	0.0	90	0.000017228						0700 - 1900
SCL	Haul Road	432	Area	838485	821259	19	5	0.0	70	0.000017228						0700 - 1900
SCL	Haul Road	433	Area	838522	821305	100	5	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	434	Area	838559	821350	20	5	0.0	72	0.000017228						0700 - 1900
SCL	Haul Road	435	Area	838564	821378	38	5	0.0	87	0.000017228						0700 - 1900
CKR	Haul Road	436	Area	838741	820048	8	355	0.0	46	0.000019878						0700 - 1900
CKR	Haul Road	437	Area	838623	820170	5	82	0.0	49	0.000019878						0700 - 1900
CKR	Haul Road	438	Area	838619	820252	120	6	0.0	69	0.000019878						0700 - 1900
CKR	Haul Road	439	Area	838693	820338	122	6	0.0	30	0.000019878						0700 - 1900
CKR	Haul Road	440	Area	838674	820444	8	223	0.0	46	0.000019878						0700 - 1900

Note:

P1: Reference to Appendix 4.1 of Central Kowloon Route EIA2013

P2: The Kai Tak Approach Channel and Kwun Tong Typhoon Shelter Improvement Works (Phase 2)

Haul Roads The locations of the Haul roads are referred to working paper No.46 Traffic Study for Spoil Delivery to Kai Tak Barging Point (rev D), August 2015. The emission factors of the haul roads of difference project are respectively referred to the heavy construction works of CKR and SCL listed in CKR EIA 2013.

Area Dust Sources for Concurrent Projects  
 Long-term (Annual) assessment - Mitigated

Projects & References	Sources/ Activities	Source ID	Source Type	Coordinates of		Dimensio		Height (m)	Angle / Width (deg / m)	Emission Rate (g/s/sq.m)						Working Hour
				X1	Y1	X2	Y2			Heavy Construction		Stockpiling		Wind Erosion		
				(m)	(m)	(m)	(m)			Working Hours	Non-working Hours	Working Hours	Non-working Hours	Working Hours [1]	Non-working Hours [2]	
P1	Tunnel Construction	1	Area	838456	820167	255	86	0.5	59	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	2	Area	838558	820308	99	100	0.5	40	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	3	Area	838707	820392	175	70	0.5	17	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	4	Area	838850	820399	50	112	0.5	83	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	5	Area	838836	820447	100	40	0.5	0	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	6	Area	838908	820529	130	27	0.5	66	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	8	Area	838967	820624	91	30	0.5	40	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	9	Area	838876	820707	34	74	0.5	30	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	10	Area	838900	820645	28	54	0.5	5	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	11	Area	838877	820537	158	37	0.5	66	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	12	Area	838945	820424	75	18	0.5	10	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Adminstration Buidling	13	Area	838737	820469	45	50	0.5	0	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	14	Area	838735	820506	10	102	0.5	81	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	15	Area	838651	820525	22	68	0.5	86	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Ventilation Building	16	Area	838673	820486	65	36	0.5	0	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	17	Area	838624	820459	10	112	0.5	0	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	18	Area	838668	820437	79	40	0.5	17	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	19	Area	838659	820309	80	60	0.5	16	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	22	Area	838976	820329	37	175	0.5	48	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	23	Area	838988	820400	95	18	0.5	73	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	24	Area	839057	820382	29	314	0.5	47	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	25	Area	839149	820149	44	324	0.5	43	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	At-grade construction	33	Area	838710	820468	9	74	0.5	0	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	34	Area	838121	819922	139	90	0.5	2	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	35	Area	838257	819952	139	90	0.5	27	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	36	Area	838351	820026	98	90	0.5	40	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	37	Area	837979	819870	25	100	0.5	49	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	38	Area	837955	819951	50	25	0.5	70	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	39	Area	837988	819946	60	40	0.5	70	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Tunnel Construction	40	Area	838025	819931	60	40	0.5	70	0.000001193				0.000000013	0.000000162	0700 - 1900
P2	Opening and Piled Deck	101	Area	838728	819899	250	232	0.5	45	0.000001193				0.000000013	0.000000162	0700 - 1900
P2	Opening and Piled Deck	102	Area	838569	819929	72	32	0.5	45	0.000001193				0.000000013	0.000000162	0700 - 1900
P2	Opening and Piled Deck	103	Area	838609	819986	60	63	0.5	45	0.000001193				0.000000013	0.000000162	0700 - 1900
P2	Opening and Piled Deck	104	Area	838643	820039	63	86	0.5	45	0.000001193				0.000000013	0.000000162	0700 - 1900
P2	Opening and Piled Deck	105	Area	838676	820086	51	109	0.5	45	0.000001193				0.000000013	0.000000162	0700 - 1900
P1	Stockpile	E-5P02	Area	838591	820107	95	55	0.5	49			0.000010015		0.000000224	0.000002695	0700 - 1900



SCL	Haul Road	401	Area	838683	820065	5	480	0.0	46	0.000017228						0700 - 1900
SCL	Haul Road	402	Area	838505	820241	5	22	0.0	25	0.000017228						0700 - 1900
SCL	Haul Road	403	Area	838500	820266	29	5	0.0	90	0.000017228						0700 - 1900
SCL	Haul Road	404	Area	838545	820405	266	5	0.0	70	0.000017228						0700 - 1900
SCL	Haul Road	405	Area	838571	820587	5	120	0.0	19	0.000017228						0700 - 1900
SCL	Haul Road	406	Area	838521	820702	5	131	0.0	28	0.000017228						0700 - 1900
SCL	Haul Road	407	Area	838478	820762	5	20	0.0	74	0.000017228						0700 - 1900
SCL	Haul Road	408	Area	838461	820772	5	21	0.0	41	0.000017228						0700 - 1900
SCL	Haul Road	409	Area	838454	820794	5	26	0.0	3	0.000017228						0700 - 1900
SCL	Haul Road	410	Area	838422	820842	5	94	0.0	41	0.000017228						0700 - 1900
SCL	Haul Road	411	Area	838386	820895	5	36	0.0	16	0.000017228						0700 - 1900
SCL	Haul Road	412	Area	838357	820937	5	69	0.0	44	0.000017228						0700 - 1900
SCL	Haul Road	413	Area	838327	820963	5	13	0.0	73	0.000017228						0700 - 1900
SCL	Haul Road	414	Area	838315	820964	13	5	0.0	14	0.000017228						0700 - 1900
SCL	Haul Road	415	Area	838294	820949	40	5	0.0	43	0.000017228						0700 - 1900
SCL	Haul Road	416	Area	838272	820935	15	5	0.0	4	0.000017228						0700 - 1900
SCL	Haul Road	417	Area	838230	820901	97	5	0.0	44	0.000017228						0700 - 1900
SCL	Haul Road	418	Area	838119	820834	166	5	0.0	24	0.000017228						0700 - 1900
SCL	Haul Road	419	Area	838025	820802	5	36	0.0	87	0.000017228						0700 - 1900
SCL	Haul Road	420	Area	837987	820785	51	5	0.0	42	0.000017228						0700 - 1900
SCL	Haul Road	421	Area	837873	820727	207	5	0.0	23	0.000017228						0700 - 1900
SCL	Haul Road	422	Area	837819	820654	5	96	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	423	Area	837817	820588	93	5	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	424	Area	837884	820855	5	238	0.0	46	0.000017228						0700 - 1900
SCL	Haul Road	425	Area	838347	820959	5	19	0.0	11	0.000017228						0700 - 1900
SCL	Haul Road	426	Area	838347	820975	14	5	0.0	77	0.000017228						0700 - 1900
SCL	Haul Road	427	Area	838425	821064	225	5	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	428	Area	838503	821151	10	5	0.0	74	0.000017228						0700 - 1900
SCL	Haul Road	429	Area	838503	821160	5	9	0.0	19	0.000017228						0700 - 1900
SCL	Haul Road	430	Area	838491	821175	5	30	0.0	43	0.000017228						0700 - 1900
SCL	Haul Road	431	Area	838481	821218	64	5	0.0	90	0.000017228						0700 - 1900
SCL	Haul Road	432	Area	838485	821259	19	5	0.0	70	0.000017228						0700 - 1900
SCL	Haul Road	433	Area	838522	821305	100	5	0.0	47	0.000017228						0700 - 1900
SCL	Haul Road	434	Area	838559	821350	20	5	0.0	72	0.000017228						0700 - 1900
SCL	Haul Road	435	Area	838564	821378	38	5	0.0	87	0.000017228						0700 - 1900
CKR	Haul Road	436	Area	838741	820048	8	355	0.0	46	0.000019878						0700 - 1900
CKR	Haul Road	437	Area	838623	820170	5	82	0.0	49	0.000019878						0700 - 1900
CKR	Haul Road	438	Area	838619	820252	120	6	0.0	69	0.000019878						0700 - 1900
CKR	Haul Road	439	Area	838693	820338	122	6	0.0	30	0.000019878						0700 - 1900
CKR	Haul Road	440	Area	838674	820444	8	223	0.0	46	0.000019878						0700 - 1900

Note:

P1: Reference to Appendix 4.1 of Central Kowloon Route EIA2013

P2: The Kai Tak Approach Channel and Kwun Tong Typhoon Shelter Improvement Works (Phase 2)

Haul Roads The locations of the Haul roads are referred to working paper No.46 Traffic Study for Spoil Delivery to Kai Tak Barging Point (rev D), August 2015. The emission factors of the haul roads of difference project are respectively referred to the heavy construction works of CKR and SCL listed in CKR EIA 2013.

Line Sources for Concurrent Projects

Short-term (1-hour & 24-hour) assessment - Mitigated

Projects	Sources/ Activities	Source ID	Source Type	Coordinates of		Dimension (m)		Height (m)	Angle / Width (deg / m)	Emission Rate (g/s/sq.m)						Working Hour
				X1	Y1	X2	Y2			Heavy Construction		Stockpiling		Wind Erosion		
				(m)	(m)	(m)	(m)			Working Hours	Non- working Hours	Working Hours	Non- working Hours	Working Hours	Non-working Hours	
KTD	Construction of Trunk Road T2 and Local Roads	212	Line	839198	819950	838847	820293	0.0	14	0.000209600				0.000018870	0.000018870	0700 - 1900
KTD	Construction of Road D3	237	Line	838582	820607	838619	820501	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTD	Construction of Road D3	238	Line	838619	820501	838598	820209	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTD	Construction of Road D3	239	Line	838598	820209	838608	820161	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTD	Construction of Road D3	240	Line	838608	820161	838630	820118	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTD	Construction of Road D2, D3, L6, L17 & L19	206	Line	838568	820644	838487	820794	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTD	Construction of Road D2, D3, L6, L17 & L19	207	Line	838487	820794	838605	820919	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTN	Rebuild Kai Tak Nullah	336	Line	838617	821010	838761	820833	0.0	40	0.000598700				0.000053910	0.000053910	0700 - 1900
KTN	Rebuild Kai Tak Nullah	337	Line	838761	820833	838824	820640	0.0	40	0.000598700				0.000053910	0.000053910	0700 - 1900
KTN	Rebuild Kai Tak Nullah	338	Line	838824	820640	838819	820471	0.0	40	0.000598700				0.000053910	0.000053910	0700 - 1900
KTD	Construction of Road D1, L7, L8, L9 & L16	210	Line	837670	820839	837945	820573	0.0	20	0.000299400				0.000026950	0.000026950	0700 - 1900
KTD	Construction of Drainage	342	Line	837914	820618	837980	820630	0.0	10	0.000149700				0.000013480	0.000013480	0700 - 1900
KTD	Construction of Drainage	343	Line	837980	820630	838134	820782	0.0	10	0.000149700				0.000013480	0.000013480	0700 - 1900
KTN	Rebuild Kai Tak Nullah	335	Line	838214	821403	838617	821010	0.0	40	0.000598700				0.000053910	0.000053910	0700 - 1900

Note

KTD: Kai Tak Development Stage 4 (D2 road construction) and North Apron Remaining Infrastructure

KDN: Reconstruction and upgrading of Kai Tak Nullah, reference to Appendix 4.1 of Central Kowloon Route EIA2013

Reference to Appendix 4.1 of Central Kowloon Route EIA2013

Line Sources for Concurrent Projects

Long-term (annual) assessment - Mitigated

Projects	Sources/ Activities	Source ID	Source Type	Coordinates of		Dimension (m)		Height (m)	Angle / Width (deg / m)	Emission Rate (g/s/sq.m)						Working Hour
				X1	Y1	X2	Y2			Heavy Construction		Stockpiling		Wind Erosion		
				(m)	(m)	(m)	(m)			Working Hours	Non- working Hours	Working Hours	Non- working Hours	Working Hours	Non-working Hours	
KTD	Construction of Trunk Road T2 and Local Roads	212	Line	839198	819950	838847	820293	0.0	14	0.000025152				0.000002264	0.000002264	0700 - 1900
KTD	Construction of Road D3	237	Line	838582	820607	838619	820501	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTD	Construction of Road D3	238	Line	838619	820501	838598	820209	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTD	Construction of Road D3	239	Line	838598	820209	838608	820161	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTD	Construction of Road D3	240	Line	838608	820161	838630	820118	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTD	Construction of Road D2, D3, L6, L17 & L19	206	Line	838568	820644	838487	820794	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTD	Construction of Road D2, D3, L6, L17 & L19	207	Line	838487	820794	838605	820919	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTN	Rebuild Kai Tak Nullah	336	Line	838617	821010	838761	820833	0.0	40	0.000071844				0.000006469	0.000006469	0700 - 1900
KTN	Rebuild Kai Tak Nullah	337	Line	838761	820833	838824	820640	0.0	40	0.000071844				0.000006469	0.000006469	0700 - 1900
KTN	Rebuild Kai Tak Nullah	338	Line	838824	820640	838819	820471	0.0	40	0.000071844				0.000006469	0.000006469	0700 - 1900
KTD	Construction of Road D1, L7, L8, L9 & L16	210	Line	837670	820839	837945	820573	0.0	20	0.000035928				0.000003234	0.000003234	0700 - 1900
KTD	Construction of Drainage	342	Line	837914	820618	837980	820630	0.0	10	0.000017964				0.000001618	0.000001618	0700 - 1900
KTD	Construction of Drainage	343	Line	837980	820630	838134	820782	0.0	10	0.000017964				0.000001618	0.000001618	0700 - 1900
KTN	Rebuild Kai Tak Nullah	335	Line	838214	821403	838617	821010	0.0	40	0.000071844				0.000006469	0.000006469	0700 - 1900

Note

KTD: Kai Tak Development Stage 4 (D2 road construction) and North Apron Remaining Infrastructure

KDN: Reconstruction and upgrading of Kai Tak Nullah, reference to Appendix 4.1 of Central Kowloon Route EIA2013

Reference to Appendix 4.1 of Central Kowloon Route EIA2013