

Appendix 3.1 Calculation of Dust Emission Rate

A. Calculation of Watering Efficiency

With reference to Cowherd et al., "Control of Open Fugitive Dust Sources, EPA-450/3-88-008, U.S. Environmental Protection Agency, Research Triangle Park, NC, percentage of dust mitigation efficiency is calculated from Equation (3-2) :

$$C = 100 - 0.8 p d t / i$$

where

p = Potential average hourly daytime evaporation rate, mm/hour = 0.23676 ^[1]

d = Average hourly daytime traffic rate per hour = 10 per hour ^[2]

t = time between application in hour

i = Application intensity = 0.228 L/m² ^[3]

Notes:

[1] p = 0.0049 x 48.3189 inch, where 48.3189 inch is equivalent to the total evaporation of 1227.3mm obtained from Hong Kong Observatory (https://www.hko.gov.hk/en/cis/normal/1981_2010/normals.htm)

[2] Estimated by Engineer

[3] The assumptions provided are for the purpose of assessment predictions only. Actual figures would be defined in the detailed design stage.

By applying the Equation (3-2) with the above assumptions,

$$\begin{aligned} \text{Dust suppression efficiency} &= (100 - 0.8 \times (0.23676 \times 10 \times 1) / 0.228) / 100 \\ &= 91.7\% \end{aligned}$$

B. Heavy Construction Activities

According to AP-42, S13.2.3, 1/95 ed.,

$$\text{TSP emission factor} = 2.69 \quad \text{Mg/hectare/month of activity}$$

Assume 26 working days per month and 10 working hours a day during unit conversion,

$$\text{TSP emission factor} = 2.874\text{E-}04 \quad \text{g/m}^2/\text{s} \quad 0$$

According to USEPA AP-42, 5th ed. 11/06 ed. S13.2.4,

$$\text{RSP/TSP Ratio} = 0.473$$

$$\text{FSP/TSP Ratio} = 0.072$$

With dust suppression efficiency of 91.7%, the dust emission factors (8am to 6pm) are,

Therefore, the unmitigated dust emission factors (8am to 6pm) are,

$$\begin{aligned} \text{TSP emission factor} &= 2.874\text{E-}04 && \times && (1-91.7\%) \\ &= 2.387\text{E-}05 && \text{g/m}^2/\text{s} \\ \\ \text{RSP emission factor} &= 2.874\text{E-}04 && \times && 0.473 && \times && (1-91.7\%) \\ &= 1.128\text{E-}05 && \text{g/m}^2/\text{s} \\ \\ \text{FSP emission factor} &= 2.874\text{E-}04 && \times && 0.072 && \times && (1-91.7\%) \\ &= 1.717\text{E-}06 && \text{g/m}^2/\text{s} \end{aligned}$$

Appendix 3.1 Calculation of Dust Emission Rate

C. Wind Erosion

According to AP-42, 5th ed., Table 11.9-4,

TSP emission factor = 8.500E-01 (Mg/hectare/yr)

Assume 365 days per year and 24 hours a day during unit conversion,

TSP emission factor 2.695E-06 g/m²/s

According to USEPA AP-42, 5th ed. 11/06 ed. S13.2.4,

RSP/TSP Ratio = 0.473

FSP/TSP Ratio = 0.072

Therefore, the wind erosion dust emission factors (6pm to 8am) are,

Wind erosion TSP emission factor = 2.695E-06 g/m²/s

Wind erosion RSP emission factor = 1.275E-06 g/m²/s

Wind erosion FSP emission factor = 1.941E-07 g/m²/s

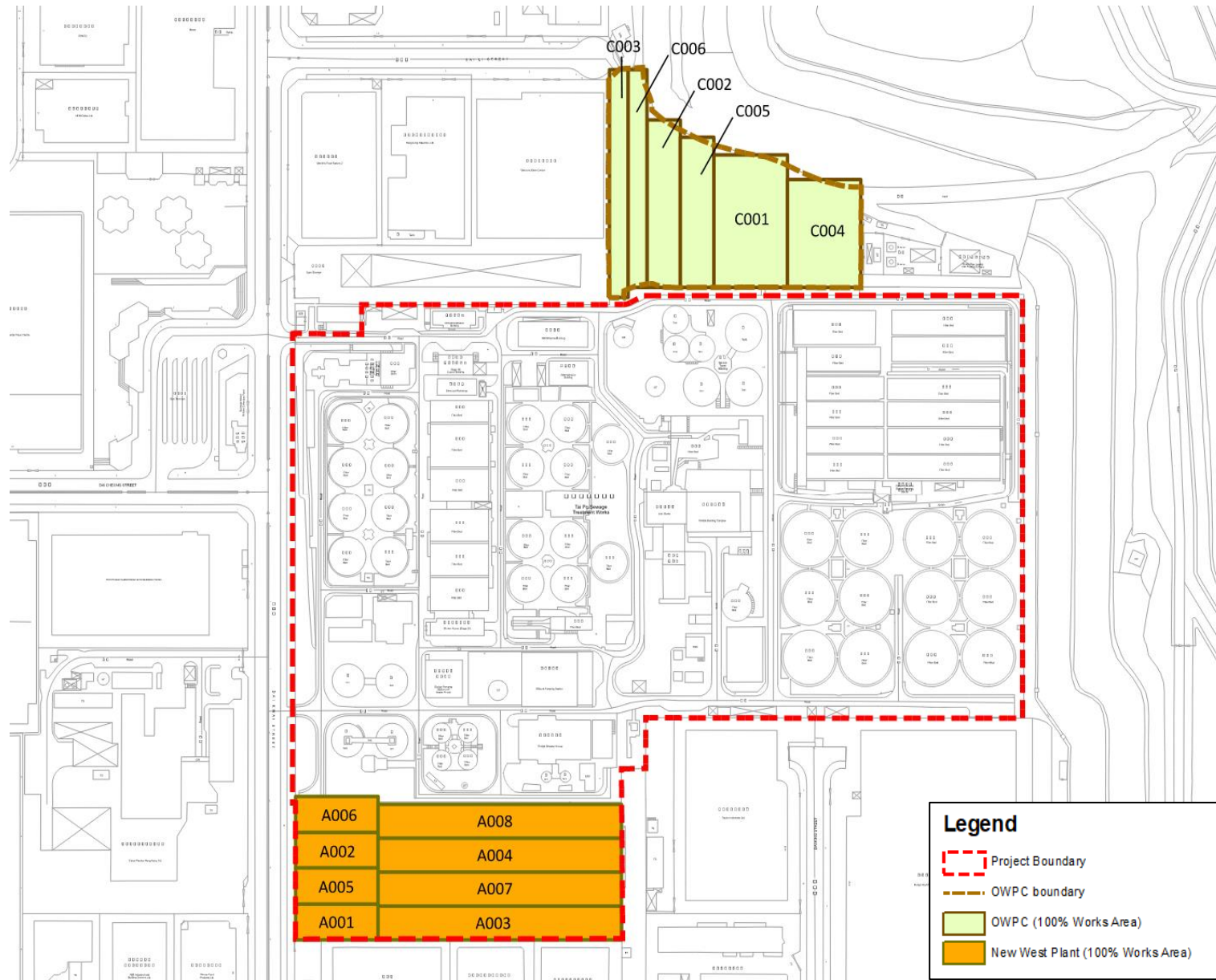
Scenario A - List of Fugitive Dust Emission Sources (100% active works area of New West Plant)

ID	Type	Portion	Coordinates		Length		Area	Base Height	Release Height	Angle	Working Hour (8am to 6pm)			Non-Working Hour (6pm to 8am)		
			X	Y	X (m)	Y (m)	(m ²)	(mPD)	(mAG)	(degree)	TSP	RSP	FSP	TSP	RSP	FSP
											(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)
A001	Area	South	837462.7	835017.2	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A002	Area	South	837462.7	835059.5	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A003	Area	South	837514.0	835017.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A004	Area	South	837514.0	835057.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A005	Area	North	837462.7	835038.4	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A006	Area	North	837462.7	835080.7	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A007	Area	North	837514.0	835037.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A008	Area	North	837514.0	835077.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C001	Area	West	837722.3	835402.7	45.7	78.1	3573	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C002	Area	West	837680.8	835402.7	20.8	98.8	2050	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C003	Area	West	837657.6	835396.7	11.6	134.4	1559	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C004	Area	East	837768.0	835402.7	45.5	63.6	2896	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C005	Area	East	837701.6	835402.7	20.8	88.6	1839	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C006	Area	East	837669.2	835402.7	11.6	128.4	1489	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07

Note:

The working hours, dust emission rate and watering frequency of OWPC were assumed to be the same as the proposed works in TPSTW.

Scenario A - List of Fugitive Dust Emission Sources (100% active works area of New West Plant)



Appendix 3.1 Calculation of Dust Emission Rate

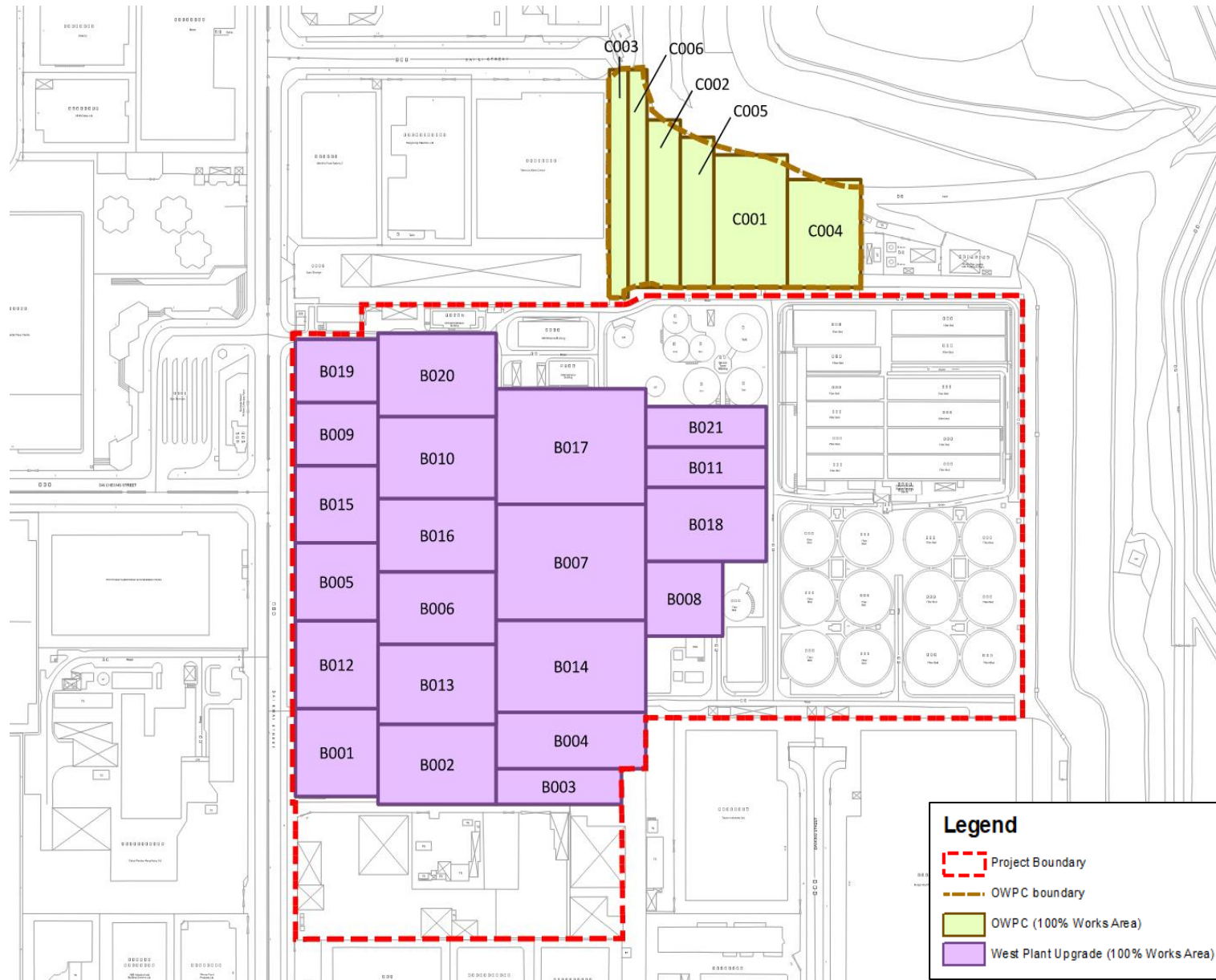
Scenario B - List of Fugitive Dust Emission Sources (100% active works area of West Plant Upgrade)

ID	Type	Portion	Coordinates		Length		Area (m ²)	Base Height (mPD)	Release Height (mAG)	Angle (degree)	Working Hour (8am to 6pm)			Non-Working Hour (6pm to 8am)		
			X	Y	X (m)	Y (m)					TSP	RSP	FSP	TSP	RSP	FSP
											(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)
B001	Area	South	837462.7	835101.9	51.3	51.8	2657	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B002	Area	South	837514	835097.2	73.2	47.2	3455	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B003	Area	South	837587.3	835097.2	77.7	21.1	1639	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B004	Area	South	837587.3	835118.3	92.8	33.2	3081	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B005	Area	South	837462.5	835205.6	51.3	45.9	2355	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B006	Area	South	837514	835191.5	73.2	43	3148	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B007	Area	South	837587.3	835205.8	92.8	68.5	6357	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B008	Area	South	837680.1	835196.5	47.7	44.1	2104	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B009	Area	South	837462.6	835297.5	51.4	37.3	1917	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B010	Area	South	837514	835277.5	73.2	49	3587	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B011	Area	South	837680.1	835284.6	74.7	23.9	1785	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B012	Area	North	837462.7	835153.7	51.3	51.8	2657	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B013	Area	North	837514	835144.4	73.2	47.2	3455	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B014	Area	North	837587.3	835151.5	92.8	54.3	5039	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B015	Area	North	837462.5	835251.5	51.3	45.9	2355	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B016	Area	North	837514	835234.5	73.2	43	3148	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B017	Area	North	837587.3	835274.3	92.8	68.5	6357	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B018	Area	North	837680.1	835240.6	74.7	44.1	3294	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B019	Area	North	837462.6	835334.8	51.4	37.3	1917	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B020	Area	North	837514	835326.5	73.2	49	3587	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B021	Area	North	837680.1	835308.5	74.7	23.9	1785	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C001	Area	West	837722.3	835402.7	45.7	78.1	3573	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C002	Area	West	837680.8	835402.7	20.8	98.8	2050	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C003	Area	West	837657.6	835396.7	11.6	134.4	1559	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C004	Area	East	837768.0	835402.7	45.5	63.6	2896	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C005	Area	East	837701.6	835402.7	20.8	88.6	1839	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C006	Area	East	837669.2	835402.7	11.6	128.4	1489	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07

Note:

The working hours, dust emission rate and watering frequency of OWPC were assumed to be the same as the proposed works in TPSTW.

Scenario B - List of Fugitive Dust Emission Sources (100% active works area of West Plant Upgrade)



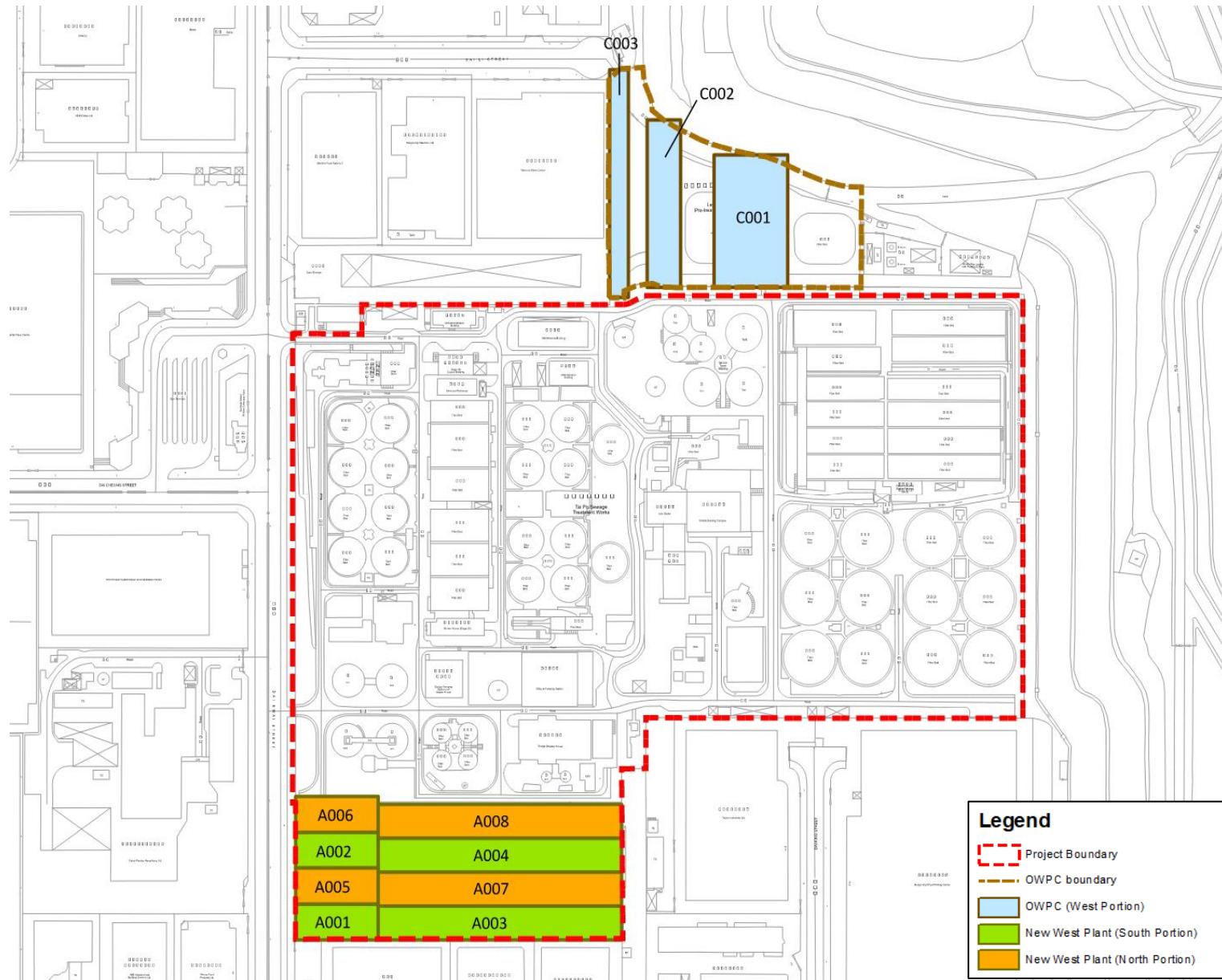
Appendix 3.1 Calculation of Dust Emission Rate

ID	Type	Coordinates		Length		Area (m ²)	Base Height (mPD)	Release Height (mAG)	Angle (degree)	Working Hour (8am to 6pm)			Non-Working Hour (6pm to 8am)		
		X	Y	X (m)	Y (m)					TSP	RSP	FSP	TSP	RSP	FSP
Scenario C1 - List of Fugitive Dust Emission Sources (50% active works area of New West Plant - South Portion and OWPC - West Portion)															
A001	Area	837462.7	835017.2	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A002	Area	837462.7	835059.5	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A003	Area	837514.0	835017.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A004	Area	837514.0	835057.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C001	Area	837722.3	835402.7	45.7	78.1	3573	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C002	Area	837680.8	835402.7	20.8	98.8	2050	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C003	Area	837657.6	835396.7	11.6	134.4	1559	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
Scenario C2 - List of Fugitive Dust Emission Sources (50% active works area of New West Plant - North Portion and OWPC - West Portion)															
A005	Area	837462.7	835038.4	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A006	Area	837462.7	835080.7	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A007	Area	837514.0	835037.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A008	Area	837514.0	835077.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C001	Area	837722.3	835402.7	45.7	78.1	3573	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C002	Area	837680.8	835402.7	20.8	98.8	2050	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C003	Area	837657.6	835396.7	11.6	134.4	1559	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07

Note:

The working hours, dust emission rate and watering frequency of OWPC were assumed to be te same as the proposed works in TPSTW.

Scenario C1, C2 - List of Fugitive Dust Emission Sources (50% active works area of New West Plant and 50% active works area of OWPC)



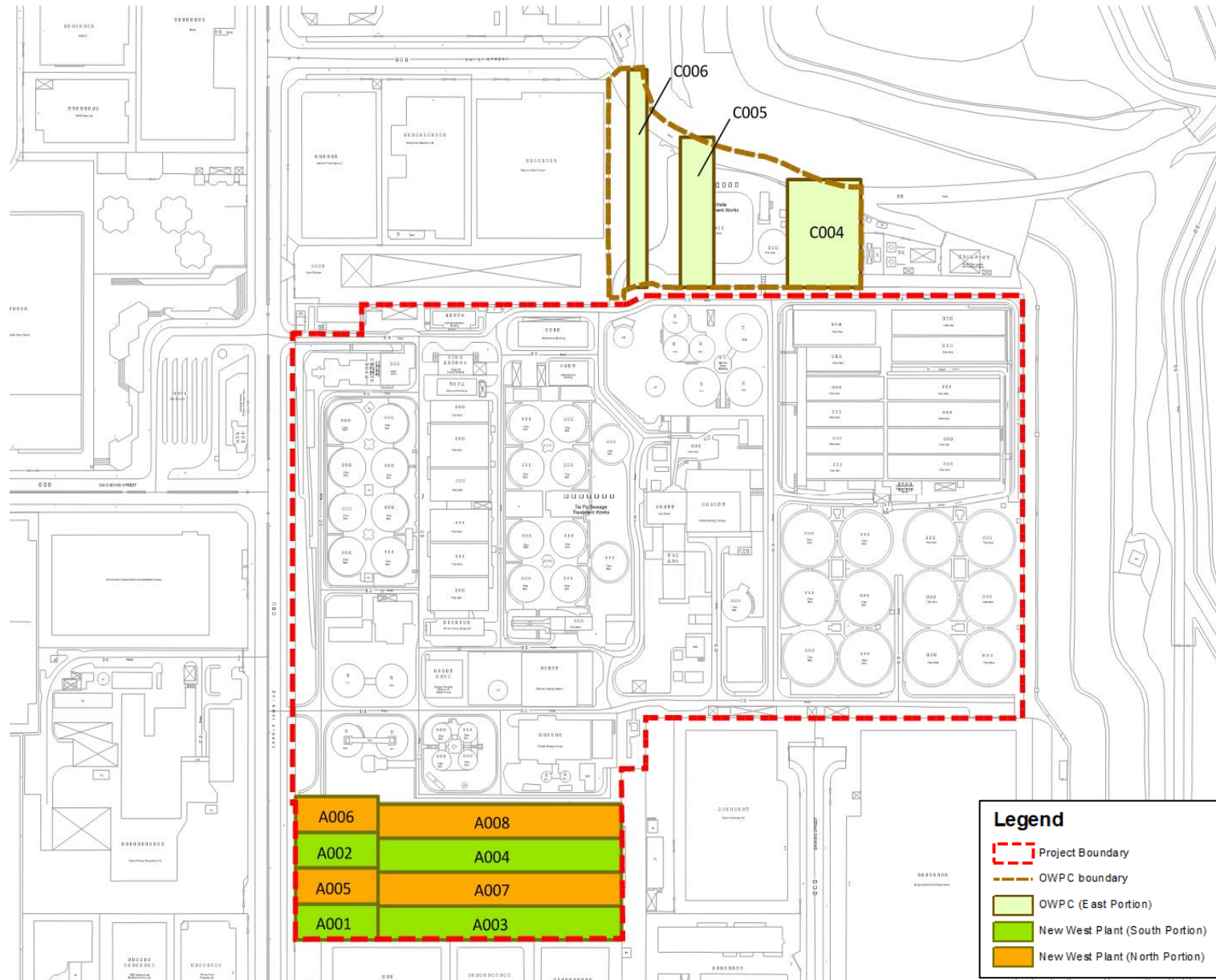
Appendix 3.1 Calculation of Dust Emission Rate

ID	Type	Coordinates		Length		Area (m ²)	Base Height (mPD)	Release Height (mAG)	Angle (degree)	Working Hour (8am to 6pm)			Non-Working Hour (6pm to 8am)		
		X	Y	X (m)	Y (m)					TSP	RSP	FSP	TSP	RSP	FSP
Scenario C3 - List of Fugitive Dust Emission Sources (50% active works area of New West Plant - South Portion and OWPC - East Portion)															
A001	Area	837462.7	835017.2	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A002	Area	837462.7	835059.5	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A003	Area	837514.0	835017.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A004	Area	837514.0	835057.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C004	Area	837768.0	835402.7	45.5	63.6	2896	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C005	Area	837701.6	835402.7	20.8	88.6	1839	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C006	Area	837669.2	835402.7	11.6	128.4	1489	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
Scenario C4 - List of Fugitive Dust Emission Sources (50% active works area of New West Plant - North Portion and OWPC - East Portion)															
A005	Area	837462.7	835038.4	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A006	Area	837462.7	835080.7	51.3	21.2	1088	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A007	Area	837514.0	835037.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
A008	Area	837514.0	835077.2	151.0	20.0	3020	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C004	Area	837768.0	835402.7	45.5	63.6	2896	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C005	Area	837701.6	835402.7	20.8	88.6	1839	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C006	Area	837669.2	835402.7	11.6	128.4	1489	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07

Note:

The working hours, dust emission rate and watering frequency of OWPC were assumed to be the same as the proposed works in TPSTW.

Scenario C3, C4 - List of Fugitive Dust Emission Sources (50% active works area of New West Plant and 50% active works area of OWPC)



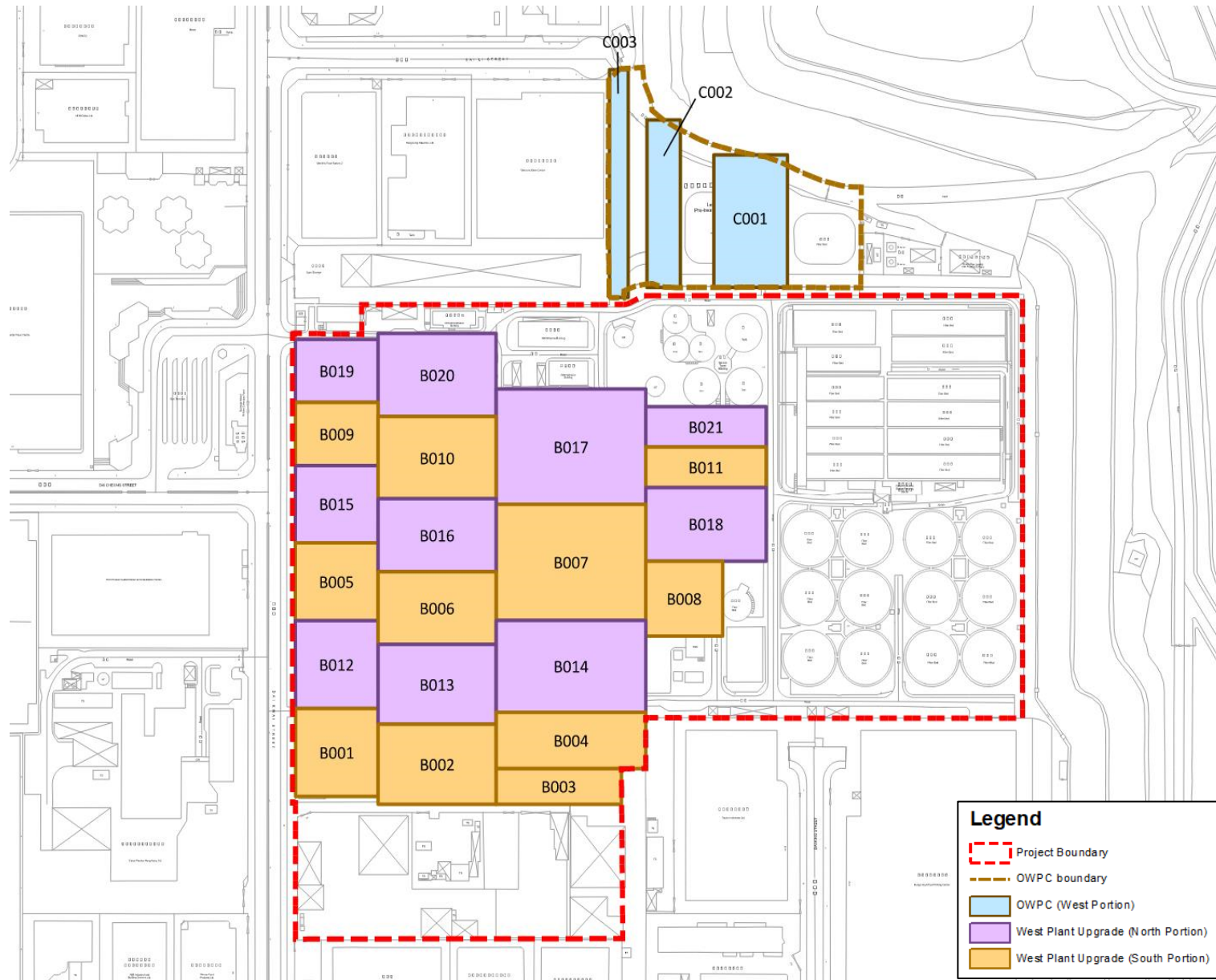
Appendix 3.1 Calculation of Dust Emission Rate

ID	Type	Coordinates		Length		Area (m ²)	Base Height (mPD)	Release Height (mAG)	Angle (degree)	Working Hour (8am to 6pm)			Non-Working Hour (6pm to 8am)		
		X	Y	X (m)	Y (m)					TSP	RSP	FSP	TSP	RSP	FSP
						(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)				
Scenario D1 - List of Fugitive Dust Emission Sources (50% active works area of West Plant Upgrade - South Portion and OWPC - West Portion)															
B001	Area	837462.7	835101.9	51.3	51.8	2657	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B002	Area	837514.0	835097.2	73.2	47.2	3455	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B003	Area	837587.3	835097.2	77.7	21.1	1639	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B004	Area	837587.3	835118.3	92.8	33.2	3081	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B005	Area	837462.5	835205.6	51.3	45.9	2355	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B006	Area	837514.0	835191.5	73.2	43.0	3148	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B007	Area	837587.3	835205.8	92.8	68.5	6357	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B008	Area	837680.1	835196.5	47.7	44.1	2104	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B009	Area	837462.6	835297.5	51.4	37.3	1917	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B010	Area	837514.0	835277.5	73.2	49.0	3587	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B011	Area	837680.1	835284.6	74.7	23.9	1785	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C001	Area	837722.3	835402.7	45.7	78.1	3573	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C002	Area	837680.8	835402.7	20.8	98.8	2050	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C003	Area	837657.6	835396.7	11.6	134.4	1559	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
Scenario D2 - List of Fugitive Dust Emission Sources (50% active works area of West Plant Upgrade - North Portion and OWPC - West Portion)															
B012	Area	837462.7	835153.7	51.3	51.8	2657	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B013	Area	837514.0	835144.4	73.2	47.2	3455	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B014	Area	837587.3	835151.5	92.8	54.3	5039	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B015	Area	837462.5	835251.5	51.3	45.9	2355	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B016	Area	837514.0	835234.5	73.2	43.0	3148	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B017	Area	837587.3	835274.3	92.8	68.5	6357	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B018	Area	837680.1	835240.6	74.7	44.1	3294	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B019	Area	837462.6	835334.8	51.4	37.3	1917	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B020	Area	837514.0	835326.5	73.2	49.0	3587	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B021	Area	837680.1	835308.5	74.7	23.9	1785	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C001	Area	837722.3	835402.7	45.7	78.1	3573	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C002	Area	837680.8	835402.7	20.8	98.8	2050	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C003	Area	837657.6	835396.7	11.6	134.4	1559	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07

Note:

The working hours, dust emission rate and watering frequency of OWPC were assumed to be te same as the proposed works in TPSTW.

Scenario D1, D2 - List of Fugitive Dust Emission Sources (50% active works area of West Plant Upgrade and 50% active works area of OWPC)



Appendix 3.1 Calculation of Dust Emission Rate

ID	Type	Coordinates		Length		Area (m ²)	Base Height (mPD)	Release Height (mAG)	Angle (degree)	Working Hour (8am to 6pm)			Non-Working Hour (6pm to 8am)		
		X	Y	X (m)	Y (m)					TSP	RSP	FSP	TSP	RSP	FSP
						(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)	(g/m ² /s)				
Scenario D3 - List of Fugitive Dust Emission Sources (50% active works area of West Plant Upgrade - South Portion and OWPC - East Portion)															
B001	Area	837462.7	835101.9	51.3	51.8	2657	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B002	Area	837514.0	835097.2	73.2	47.2	3455	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B003	Area	837587.3	835097.2	77.7	21.1	1639	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B004	Area	837587.3	835118.3	92.8	33.2	3081	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B005	Area	837462.5	835205.6	51.3	45.9	2355	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B006	Area	837514.0	835191.5	73.2	43.0	3148	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B007	Area	837587.3	835205.8	92.8	68.5	6357	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B008	Area	837680.1	835196.5	47.7	44.1	2104	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B009	Area	837462.6	835297.5	51.4	37.3	1917	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B010	Area	837514.0	835277.5	73.2	49.0	3587	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B011	Area	837680.1	835284.6	74.7	23.9	1785	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C004	Area	837768.0	835402.7	45.5	63.6	2896	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C005	Area	837701.6	835402.7	20.8	88.6	1839	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C006	Area	837669.2	835402.7	11.6	128.4	1489	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
Scenario D4 - List of Fugitive Dust Emission Sources (50% active works area of West Plant Upgrade - North Portion and OWPC - East Portion)															
B012	Area	837462.7	835153.7	51.3	51.8	2657	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B013	Area	837514.0	835144.4	73.2	47.2	3455	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B014	Area	837587.3	835151.5	92.8	54.3	5039	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B015	Area	837462.5	835251.5	51.3	45.9	2355	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B016	Area	837514.0	835234.5	73.2	43.0	3148	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B017	Area	837587.3	835274.3	92.8	68.5	6357	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B018	Area	837680.1	835240.6	74.7	44.1	3294	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B019	Area	837462.6	835334.8	51.4	37.3	1917	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B020	Area	837514.0	835326.5	73.2	49.0	3587	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
B021	Area	837680.1	835308.5	74.7	23.9	1785	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C004	Area	837768.0	835402.7	45.5	63.6	2896	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C005	Area	837701.6	835402.7	20.8	88.6	1839	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07
C006	Area	837669.2	835402.7	11.6	128.4	1489	6	2.4	0	2.387E-05	1.128E-05	1.717E-06	2.695E-06	1.275E-06	1.941E-07

Note:

The working hours, dust emission rate and watering frequency of OWPC were assumed to be te same as the proposed works in TPSTW.

Scenario D3, D4 - List of Fugitive Dust Emission Sources (50% active works area of West Plant Upgrade and 50% active works area of OWPC)

