Outlying Islands Sewerage Stage 2 -
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Calculations of odour emission factors

Appendix 3.2

Parameter	Type of Work	Type of Emission Source	Parameter		Remark
TSP	Construction Works	(1) Earth Handling / Loading, Unloading and stockpiling (day-time only)	Equation: $E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$		USEPA AP-42, S.13.2.4, 11/06 ed.
			Particle size multiplier, k	0.74	Particle size multiplier for particle size < 30μm
			Mean wind speed (m/s), U	5.05	The maximum annual averaged wind speed of four grid cells ((6,22);(7,22); (6,23) and (7,23)) extracted from MM5 files.
			Material moisture content (%), M	0.3	Material moisture content; Earth Handling / Loading, Unloading and stockpiling at construction sites and stone quarrying, and the nature of these activities are similar. The moisture content for a quarry is estimated between 0.3% and 1.1% according to Section 13.2.4 of AP-42. For conservative scenario, the minimum moisture content value (0.3%) is assumed for the construction sites.
			Calculated Emission Factor (kg/Mg), E	0.0497	$E = k \times (0.0016) \times ((U/2)^{1.3}/(M/2)^{1.4})$
			Total quantity of materials involved (m^3), Q	25000	The total amount of excavated materials and imported fill materials.
			No. of months for site formation, m	48	Duration of site formation works for the Project Site
			No. of working days per month, d	26	From Engineer
			No. of working hours per day, h	10	From Engineer (working hours = 0700hr to 1700hr)
			Average hourly material handling (m^3/hr), OA1	2.003	= Q/(m*d*h)
			Average hourly output (Mg/hr), OA2	5.008	= OA1 x 2.5Mg/m^3. Assuming the truck capacity of 6m^3 and 15tons (i.e. Soil density of 2.5 Mg/m^3)
			Maximum of materials handling hourly output (Mg/hr), OM	6.958	From Engineer
			For worst case scenario, the maximum of materials handling hourly output is adopted in the assessment		
			Site Area (m^2), A	6336	Site Area for the Project Site
			Calculated TSP emission rate (unmitigated) (g/m^2/s)	1.515E-05	= (OM x (E x 1000) / A) / (60 x 60)
			% of dust suppression	90.0%	Refer to the Attachment of "Dust Suppression Efficiency"
			Calculated TSP emission rate (mitigated) (g/m^2/s)	1.515E-06	
RSP	Construction Works	(1) Earth Handling / Loading, Unloading and stockpiling (day-time only)	Equation: $E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$		USEPA AP-42, S.13.2.4, 11/06 ed.
			Particle size multiplier, k	0.35	particle size multiplier for particle size < 10μm
			Mean wind speed (m/s), U	5.05	The maximum annual averaged wind speed of four grid cells ((6,22);(7,22); (6,23) and (7,23)) extracted from MM5 files.
			Material moisture content (%), M	0.3	Material moisture content; Earth Handling / Loading, Unloading and stockpiling at construction sites and stone quarrying, and the nature of these activities are similar. The moisture content for a quarry is estimated between 0.3% and 1.1% according to Section 13.2.4 of AP-42. For conservative scenario, the minimum moisture content value (0.3%) is assumed for the construction sites.
			Calculated Emission Factor (kg/Mg), E	0.0235	$E = k \times (0.0016) \times ((U/2)1.3/(M/2)1.4)$
			Total quantity of materials involved (m^3), Q	25000	The total amount of excavated materials and imported fill materials.
			No. of months for site formation, m	48	Duration of site formation works for the Project Site
			No. of working days per month, d	26	From Engineer
			No. of working hours per day, h	10	From Engineer (working hours = 0700hr to 1700hr)
			Average hourly material handling (m^3/hr), OA1	2.003	= Q/(m*d*h)
			Average hourly output (Mg/hr), OA2	5.008	= OA1 x 2.5Mg/m^3. Assuming the truck capacity of 6m^3 and 15tons (i.e. Soil density of 2.5 Mg/m^3)
			Maximum of materials handling hourly output (Mg/hr), OM	6.958	From Engineer
			For worst case scenario, the maximum of materials handling hourly output is adopted in the assessment		
			Site Area (m^2), A	6336	Site Area for the Project Site
			Calculated RSP emission rate (unmitigated) (g/m^2/s)	7.164E-06	= (OM x (E x 1000) / A) / (60 x 60)
			% of dust suppression	43.5%	Refer to the Attachment of "Dust Suppression Efficiency"
			Calculated RSP emission rate (mitigated) (g/m^2/s)	4.046E-06	
FSP	Construction Works	(1) Earth Handling / Loading, Unloading and stockpiling (day-time only)	Equation: $E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$		USEPA AP-42, S.13.2.4, 11/06 ed.
			Particle size multiplier, k	0.053	particle size multiplier for particle size < 2.5μm
			Mean wind speed (m/s), U	5.05	The maximum annual averaged wind speed of four grid cells ((6,22);(7,22); (6,23) and (7,23)) extracted from MM5 files.
			Material moisture content (%), M	0.3	Material moisture content; Earth Handling / Loading, Unloading and stockpiling at construction sites and stone quarrying, and the nature of these activities are similar. The moisture content for a quarry is estimated between 0.3% and 1.1% according to Section 13.2.4 of AP-42. For conservative scenario, the minimum moisture content value (0.3%) is assumed for the construction sites.
			Calculated Emission Factor (kg/Mg), E	0.0036	$E = k \times (0.0016) \times ((U/2)1.3/(M/2)1.4)$
			Total quantity of materials involved (m^3), Q	25000	The total amount of excavated materials and imported fill materials.
			No. of months for site formation, m	48	Duration of site formation works for the Project Site
			No. of working days per month, d	26	From Engineer
			No. of working hours per day, h	10	From Engineer (working hours = 0700hr to 1700hr)
			Average hourly material handling (m^3/hr), OA1	2.003	= Q/(m*d*h)
			Average hourly output (Mg/hr), OA2	5.008	= OA1 x 2.5Mg/m^3. Assuming the truck capacity of 6m^3 and 15tons (i.e. Soil density of 2.5 Mg/m^3)
			Maximum of materials handling hourly output (Mg/hr), OM	6.958	From Engineer
			For worst case scenario, the maximum of materials handling hourly output is adopted in the assessment		
			Site Area (m^2), A	6336	Site Area for the Project Site
			Calculated FSP emission rate (unmitigated) (g/m^2/s)	1.085E-06	= (OM x (E x 1000) / A) / (60 x 60)
			% of dust suppression	40.0%	Refer to the Attachment of "Dust Suppression Efficiency"
			Calculated FSP emission rate (mitigated) (g/m^2/s)	6.509E-07	

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Parameter	Type of Work	Type of Emission Source	Parameter		Remark
TSP	Construction Works	(2) Removal / Unloading soil materials by excavators (day-time only)	Emission Factor of excavator unloading topsoil (kg/Mg), E1	0.02	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed. (Scraper unloading topsoil is adopted).
			Emission Factor of topsoil removal by excavator (kg/Mg), E2	0.029	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed. (Topsoil removal by scraper is adopted).
			Total Emission by excavator (kg/Mg), E = E1 + E2	0.049	
			Total quantity of materials involved (m^3), Q	25000	The total amount of excavated materials and imported fill materials.
			No. of months for site formation, m	48	Duration of site formation works for the Project Site
			No. of working days per month, d	26	From Engineer
			No. of working hours per day, h	10	From Engineer (working hours = 0700hr to 1700hr)
			Average hourly material handling (m^3/hr), OA1	2.003	= Q/(m*d*h)
			Average hourly output (Mg/hr), OA2	5.008	= OA1 x 2.5 Mg/m^3. Assuming the truck capacity of 6m^3 and 15tons (i.e. Soil density of 2.5 Mg/m^3)
			Maximum of materials handling hourly output (Mg/hr), OM	6.958	From Engineer
			For worst case scenario, the maximum of materials handling hourly output is adopted in the assessment		
			Site Area (m^2), A	6336	Site Area for the Project Site
			Calculated TSP emission rate (unmitigated) (g/m^2/s)	1.495E-05	= (OM x (E x 1000) / A) / (60 x 60)
			% of dust suppression	90.0%	Refer to the Attachment of "Dust Suppression Efficiency"
			Calculaatd TSP emission rate (mitigated) (g/m^2/s)	1.495E-06	
RSP	Construction Works	(2) Removal / Unloading soil materials by excavators (day-time only)	TSP Emission Factor of excavator unloading topsoil (kg/Mg), E1	0.02	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed. (Scraper unloading topsoil is adopted).
			TSP Emission Factor of topsoil removal by excavator (kg/Mg), E2	0.029	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed. (Topsoil removal by scraper is adopted).
			Total TSP Emission by excavator (kg/Mg), E1 + E2	0.049	
			Calculated RSP Emission by excavator (kg/Mg), E= (E1+E2) x 0.51	0.02499	According to the generalized particle size distribution for uncontrolled processes provided in Appendix B.2 (Page B.2-13) of the USEPA AP-42 (5th Edition), the cumulative percentage of particle size of RSP and PM2.5 was reported to be 51% and 15%, respectively. RSP emission factor is converted from the above TSP emission factor based on a ration of 0.51 for RSP/TSP.
			Total quantity of materials involoved (m^3), Q	25000	The total amount of excavated materials and imported fill materials.
			No. of months for site formation, m	48	Duration of site formation works for the Project Site
			No. of working days per month, d	26	From Engineer
			No. of working hours per day, h	10	From Engineer (working hours = 0700hr to 1700hr)
			Average hourly material handling (m^3/hr), OA1	2.003	= Q/(m*d*h)
			Average hourly output (Mg/hr), OA2	5.008	= OA1 x 2.5 Mg/m^3. Assuming the truck capacity of 6m^3 and 15tons (i.e. Soil density of 2.5 Mg/m^3)
			Maximum of materials handling hourly output (Mg/hr), OM	6.958	From Engineer
			For worst case scenario, the maximum of materials handling hourly output is adopted in the assessment		
			Site Area (m^2), A	6336	Site Area for the Project Site
			Calculated RSP emission rate (unmitigated) (g/m^2/s)	7.623E-06	= (OM x (E x 1000) / A) / (60 x 60)
			% of dust suppression	43.5%	Refer to the Attachment of "Dust Suppression Efficiency"
			Calculated RSP emission rate (mitigated) (g/m^2/s)	4.305E-06	
FSP	Construction Works	(2) Removal / Unloading soil materials by excavators (day-time only)	TSP Emission Factor of excavator unloading topsoil (kg/Mg), E1	0.02	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed. (Scraper unloading topsoil is adopted).
			TSP Emission Factor of topsoil removal by excavator (kg/Mg), E2	0.029	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed. (Topsoil removal by scraper is adopted).
			Total TSP Emission by excavator (kg/Mg), E1 + E2	0.049	
			Calculated FSP Emission by excavator (kg/Mg), E= (E1+E2) x 0.15	0.00735	According to the generalized particle size distribution for uncontrolled processes provided in Appendix B.2 (Page B.2-13) of the USEPA AP-42 (5th Edition), the cumulative percentage of particle size of RSP and PM2.5 was reported to be 51% and 15%, respectively. FSP emission factor is converted from the above TSP emission factor based on a ration of 0.15 for FSP/TSP.
			Total quantity of materials involoved (m^3), Q	25000	The total amount of excavated materials and imported fill materials.
			No. of months for site formation, m	48	Duration of site formation works for the Project Site
			No. of working days per month, d	26	From Engineer
			No. of working hours per day, h	10	From Engineer (working hours = 0700hr to 1700hr)
			Average hourly material handling (m^3/hr), OA1	2.003	= Q/(m*d*h)
			Average hourly output (Mg/hr), OA2	5.008	= OA1 x 2.5 Mg/m^3. Assuming the truck capacity of 6m^3 and 15tons (i.e. Soil density of 2.5 Mg/m^3)
			Maximum of materials handling hourly output (Mg/hr), OM	6.958	From Engineer
			For worst case scenario, the maximum of materials handling hourly output is adopted in the assessment		
			Site Area (m^2), A	6336	Site Area for the Project Site
			Calculated FSP emission rate (unmitigated) (g/m^2/s)	2.242E-06	= (OM x (E x 1000) / A) / (60 x 60)
			% of dust suppression	40.0%	Refer to the Attachment of "Dust Suppression Efficiency"
			Calculated FSP emission rate (mitigated) (g/m^2/s)	1.345E-06	

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Parameter	Type of Work	Type of Emission Source	Parameter		Remark
TSP	Wind Erosion on Unpaved Area	(3) Wind Erosion	TSP emission factor (Mg/hectare/year), EF	0.85	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed.
			TSP emission rate (unmitigated) $(g/m^2/s)$	2.695E-06	$=\{(EF\times1000000)/10000m^2/(365\times24\times60\times60)\}$
RSP	Wind Erosion on Unpaved Area	(3) Wind Erosion	TSP emission factor (Mg/hectare/year)	0.85	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed.
			RSP emission factor (Mg/hectare/year), EF	0.4335	According to the generalized particle size distribution for uncontrolled processes provided in Appendix B.2 (Page B.2-13) of the USEPA AP-42 (5th Edition), the cumulative percentage of particle size of RSP and PM2.5 was reported to be 51% and 15%, respectively. RSP emission factor is converted from the above TSP emission factor based on a ration of 0.51 for RSP/TSP.
			Calculated RSP emission rate (unmitigated) $(g/m^2/s)$	1.375E-06	$=\{(EF\times1000000)/10000m^2/(365\times24\times60\times60)\}$
FSP	Wind Erosion on Unpaved Area	(3) Wind Erosion	TSP emission factor (Mg/hectare/year)	0.85	USEPA Ap-42, S.11.9, Table 11.9-4, 7/98ed.
			FSP emission factor (Mg/hectare/year), EF	0.1275	According to the generalized particle size distribution for uncontrolled processes provided in Appendix B.2 (Page B.2-13) of the USEPA AP-42 (5th Edition), the cumulative percentage of particle size of RSP and PM2.5 was reported to be 51% and 15%, respectively. FSP emission factor is converted from the above TSP emission factor based on a ration of 0.15 for FSP/TSP.
			Calculated FSP emission rate (unmitigated) $(g/m^2/s)$	4.043E-07	$=\{(EF\times1000000)/10000m^2/(365\times24\times60\times60)\}$

For Sewer Construction Work

Parameter	Day-time / Night-time	Type of Emission Source	Scenario	Emission rate
TSP	(Day-time only)	(1)+(2)+(3)	Unmitigated	3.279E-05
RSP	(Day-time only)	(1)+(2)+(3)	Unmitigated	1.616E-05
FSP	(Day-time only)	(1)+(2)+(3)	Unmitigated	3.731E-06
TSP	(Day-time only)	(1)+(2)+(3)	Mitigated	5.705E-06
RSP	(Day-time only)	(1)+(2)+(3)	Mitigated	9.725E-06
FSP	(Day-time only)	(1)+(2)+(3)	Mitigated	2.400E-06
TSP	(Night-time only)	(3)	Unmitigated	2.695E-06
RSP	(Night-time only)	(3)	Unmitigated	1.375E-06
FSP	(Night-time only)	(3)	Unmitigated	4.043E-07

For STW and SPS Construction Work

Parameter	Day-time / Night-time	Type of Emission Source	Scenario	Emission rate
TSP	(Day-time only)	(1)+(2)+(3)	Unmitigated	3.279E-05
RSP	(Day-time only)	(1)+(2)+(3)	Unmitigated	1.616E-05
FSP	(Day-time only)	(1)+(2)+(3)	Unmitigated	3.731E-06
TSP	(Day-time only)	(1)+(2)+(3)	Mitigated	5.705E-06
RSP	(Day-time only)	(1)+(2)+(3)	Mitigated	9.725E-06
FSP	(Day-time only)	(1)+(2)+(3)	Mitigated	2.400E-06
TSP	(Night-time only)	(3)	Unmitigated	2.695E-06
RSP	(Night-time only)	(3)	Unmitigated	1.375E-06
FSP	(Night-time only)	(3)	Unmitigated	4.043E-07

For Storage Area

Parameter	Day-time / Night-time	Type of Emission Source	Scenario	Emission rate
TSP	(Day-time only)	(1)	Unmitigated	1.515E-05
RSP	(Day-time only)	(1)	Unmitigated	7.164E-06
FSP	(Day-time only)	(1)	Unmitigated	1.085E-06
TSP	(Day-time only)	(1)	Mitigated	1.515E-06
RSP	(Day-time only)	(1)	Mitigated	4.046E-06
FSP	(Day-time only)	(1)	Mitigated	6.509E-07
TSP	(Night-time only)	(3)	Unmitigated	2.695E-06
RSP	(Night-time only)	(3)	Unmitigated	1.375E-06
FSP	(Night-time only)	(3)	Unmitigated	4.043E-07

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Appendix 3.2

Calculation of Dust Suppression Efficiency

The removal efficiency is estimated based on USEPA Control of Open Fugitive dust Sources (EPA-450/3-88-008), Equation (5-6) and Figure 5-2. For control efficiency, wet suppression of materials storage and handling operations is similar to that used for unpaved surfaces/ (refer. to S.5.3.2.1 of EPA-450/3-88-008).
By : C = 75 x (M - 1) [for 1 ≤ M ≤ 2] ; C = 62+6.7M [for 2 ≤ M ≤ 5]

where   C   Instantaneous control efficiency, percent
             M   ratio of controlled to uncontrolled surface moisture contents

According to the Equation (5-6), by increase the surface moisture content by a ratio of 4.18 would achieve 90% dust suppression efficiency:
            Dust suppression efficiency = 62 + 6.7 x (4.18) = 90%

Site Area:	6336 m^2	
Soil Density:	2500 kg/m^3	(from engineer)

Material moisture content; The moisture content for a quarry is estimated between 0.3% and 1.1% according to Section 13.2.4 of AP-42.

If Moisture content is 0.3%:
        Uncontrolled Surface Moisture Content: 0.3 %
        Controlled Surface Moisture Content: 1.3 %

Assume
        Depth of Water Penetrated: 0.02 m   Referenced from the Dennis R.Fitz & Kurt Bumiller(2000) " Evaluation of Watering to Control Dust in High Winds", Journal of the Air & Waste Management Association.

Therefore,
        Weight of Uncontrolled Wet Surface: (Site Area x Soil Density x Depth of Water Penetrated) / (1 - Uncontroled Surface Moisture Content)
                                            6336 x 2500 x 0.02/(1-0.3%) =   317753 kg
        Weight of Controlled Wet Surface: (Site Area x Soil Density x Depth of Water Penetrated) / (1 - Controled Surface Moisture Content)
                                            6336 x 2500 x 0.02/(1-1.3%) =   320973 kg
        Water Intensity: (Weight of Uncontrolled Wet Surface - Weight of Controlled Wet Surface)/ Site Area
                                            (320973 - 317753)/6336 =   0.5 L/m^2 (Remark: Weight of Water (1 Liter) = 1kg)

If Moisture content is 1.1%:
        Uncontrolled Surface Moisture Content: 1.1 %
        Controlled Surface Moisture Content: 4.6 %

Assume
        Depth of Water Penetrated: 0.02 m   Referenced from the Dennis R.Fitz & Kurt Bumiller(2000) " Evaluation of Watering to Control Dust in High Winds", Journal of the Air & Waste Management Association.

Therefore,
        Weight of Uncontrolled Wet Surface: (Site Area x Soil Density x Depth of Water Penetrated) / (1 - Uncontroled Surface Moisture Content)
                                            6336 x 2500 x 0.02/(1-1.1%) =   320324 kg
        Weight of Controlled Wet Surface: (Site Area x Soil Density x Depth of Water Penetrated) / (1 - Controled Surface Moisture Content)
                                            6336 x 2500 x 0.02/(1-4.6%) =   332075 kg
        Water Intensity: (Weight of Uncontrolled Wet Surface - Weight of Controlled Wet Surface)/ Site Area
                                            (332075 - 320324)/6336 =   1.9 L/m^2 (Remark: Weight of Water (1 Liter) = 1kg)

Therefore, the 1.1% moisture content adopted in the assessment for the conservative approach.

Evaporation rate

The "Summary of Meteorological and Tidal Observations in Hong Kong -2014" issued by Hong Kong Observatory (http://www.hko.gov.hk/publica/pubsmo.htm), the range of mean daily evaporation recorded in Monthly Values is 2.2 to 5.3mm (Table 15 of SUMMARY OF METEOROLOGICAL AND TIDAL OBSERVATIONS IN HONG KONG 2014)
For worst case scenario, the mean daily evaporation values of 5.3mm is adopted in assessment:
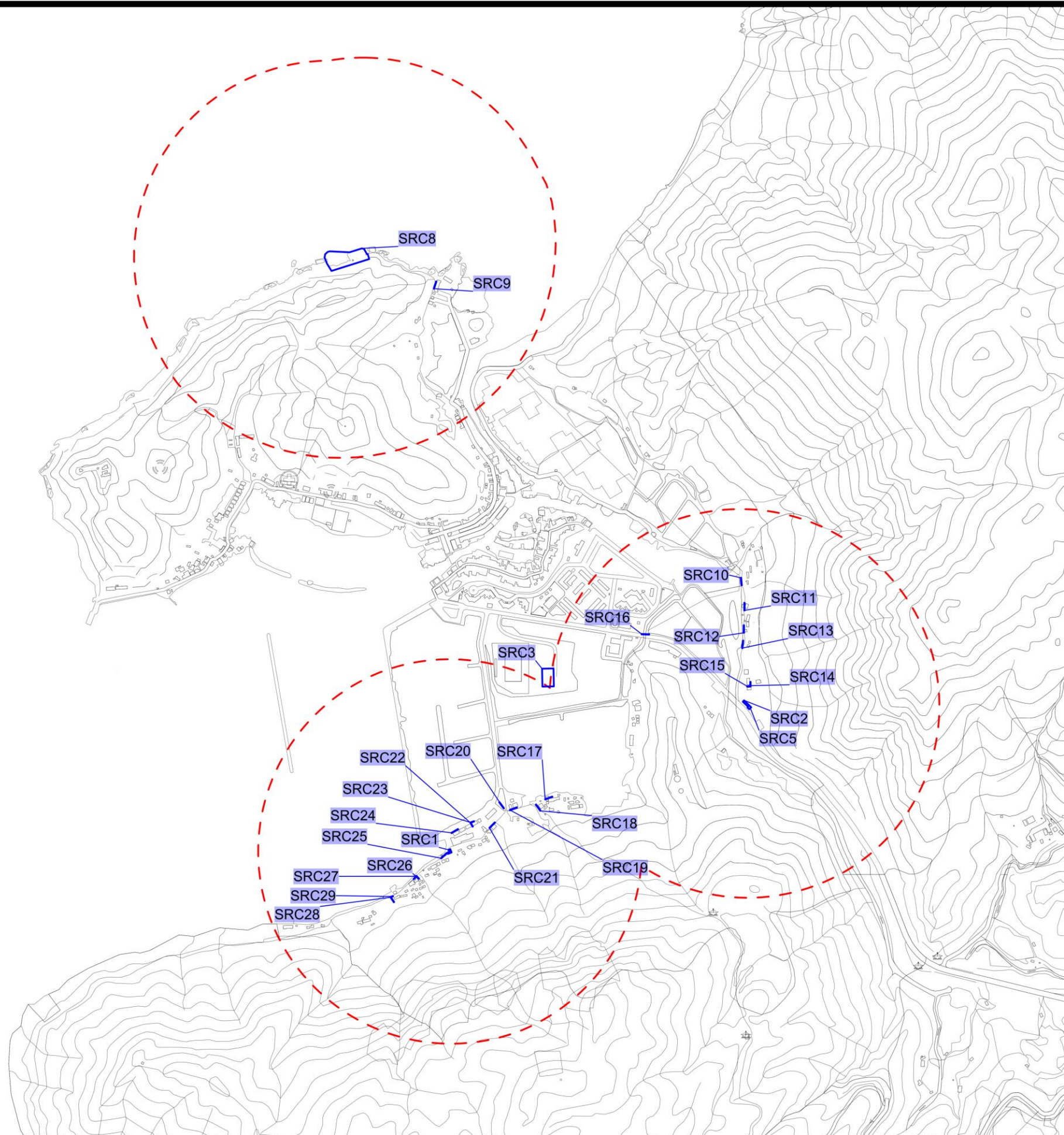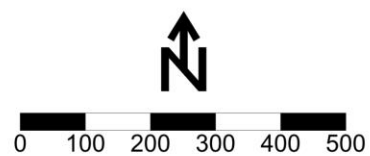
Evaporation rate:	5.3 mm/day	=	0.2 mm/h
The surface area of evaporation measurement equipment(U.S. Weather Bureau Class `A' pans):	1.14 m^2		
The area of wind erosion:	6336 m^2		
hour:	1.226 m^3	=	1225.5 L
The evaporation rate per m^2 :	0.2 L/m^2/hour		

        Water Intensity: = evaporation rate
                                     =0.2 L/m^2/hour

According to the database file of PM calculator USEPA (http://www.epa.gov/ttn/chief/tools/pm_calculator_condensibles.zip) , the dust suppression efficiencies by water sprays for RSP(PM10) and FSP(PM2.5) are 43.53% and 40.00%, respectively. Therefore, the 43.53% and 40.00% of dust efficiency are adopted for RSP and FSP in this air assessment.

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ID	Description	X-Coordinate	Y-Coordinate	Elevation (meters)	Working Hour						Non-working Hour			Release Height (m)	X-Length (m)	Y-Length (m)
					Emission Rate (Unmitigated Scenario)			Emission Rate (Mitigated Scenario)			Emission Rate-Wind Erosion (Unmitigated)					
					TSP	RSP	FSP	TSP	RSP	FSP	TSP	RSP	FSP			
SRC1	FKT_PS	803820.4	812064.8	3.9	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	--	--
SRC2	HMPS_Heavy Construction	804595.9	812456.8	3.4	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	--	--
SRC5	HM_Wind Erosion	804609.7	812443.3	3.4	1.515E-05	7.164E-06	1.085E-06	1.515E-06	4.046E-06	6.509E-07	2.695E-06	1.375E-06	4.043E-07	0	--	--
SRC8	TOSTW	803593	813642.3	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	--	--
SRC9	SST_sewage work	803781.3	813536.7	4	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC10	WHV3_sewage work	804587.3	812778.3	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	20	1
SRC11	WHV2_sewage work	804596.5	812692.6	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC12	WHV1__sewage work	804594.9	812633.9	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC13	WHV5_sewage work	804590.6	812593.7	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC14	WHV4_sewage work	804612.1	812495.3	3.7	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	10
SRC15	WHV6_sewage work	804603.5	812494.1	3.7	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	10
SRC16	TOFS_sewage work	804326.9	812630.9	4.6	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC17	LUT4_sewage work	804073.7	812197.6	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC18	LUT2_sewage work	804060.9	812167	5	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC19	LUT1_sewage work	803981	812169.3	2.9	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC20	LUPG_sewage work	803954.1	812189.8	2.7	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC21	NCT1_sewage work	803927.5	812122.5	2.9	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC22	NCT3_sewage work	803879.2	812134.5	3.2	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	10
SRC23	NTC3_sewage work1	803877.7	812136.5	3.2	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	10
SRC24	NCT2_sewage work	803827.8	812109.3	3.3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC25	PT2_sewage work	803800.4	812042.7	3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	20
SRC26	NCT4_sewage work	803742.1	811988.6	3.3	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	10
SRC27	NCT4_sewage work1	803735.4	811995.2	3.2	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	10
SRC28	NTST1_sewage work	803669.2	811940.2	7	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	15
SRC29	NTST1_sewage work1	803669.6	811942.2	6.5	3.279E-05	1.616E-05	3.731E-06	5.705E-06	9.725E-06	2.400E-06	2.695E-06	1.375E-06	4.043E-07	0	1	5
SRC3	Wind erosion area	804065.8	812539.8	3.1	1.515E-05	7.164E-06	1.085E-06	1.515E-06	4.046E-06	6.509E-07	2.695E-06	1.375E-06	4.043E-07	0	47	30