

## APPENDIX 3.8

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### **Odour Modelling Parameter and Detailed Calculations of Odour Emissions from Deodouriser Units**

Odour Emission Strength and Modeling Parameters

Scenario	Source	Source ID	X	Y	Length (m)	Width (m)	Measured Emission Rate (OU/s)	Measured Emission Rate (OU/m <sup>2</sup> s)	Corrected Emission Rate (OU/s)	
									Stability Class A & B	Stability Class C - F
Phase 1	Tipping Face 1	S1101	810702	831316	60	3	--	3.30	33.00	16.50
	Compacted area 1	S1102	810705	831318	60	17	--	0.50	5.00	2.50
	Manoeuvring area 1	S1103	810693	831312	60	10	--	0.50	5.00	2.50
	Daily cover 1	S1104	810693	831312	60	30	--	0.35	3.50	1.75
	Tipping Face 2	S1201	810708	831198	60	3	--	3.30	33.00	16.50
	Compacted area 2	S1202	810711	831197	60	17	--	0.50	5.00	2.50
	Manoeuvring area 2	S1203	810698	831200	60	10	--	0.50	5.00	2.50
	Daily cover 2	S1204	810698	831200	60	30	--	0.35	3.50	1.75
Phase 2	Special cell for animal carcasses	S1301	810714	831289	3	3	--	1.48	14.80	7.40
	Tipping Face 1	S2101	810842	830916	60	3	--	3.30	33.00	16.50
	Compacted area 1	S2102	810844	830918	60	17	--	0.50	5.00	2.50
	Manoeuvring area 1	S2103	810834	830910	60	10	--	0.50	5.00	2.50
	Daily cover 1	S2104	810834	830910	60	30	--	0.35	3.50	1.75
	Tipping Face 2	S2201	810880	830869	60	3	--	3.30	33.00	16.50
	Compacted area 2	S2202	810883	830871	60	17	--	0.50	5.00	2.50
	Manoeuvring area 2	S2203	810872	830863	60	10	--	0.50	5.00	2.50
Phase 3	Daily cover 2	S2204	810872	830863	60	30	--	0.35	3.50	1.75
	Special cell for animal carcasses	S2301	810861	830893	3	3	--	1.48	14.80	7.40
	Tipping Face 1	S3101	810472	831237	60	3	--	3.30	33.00	16.50
	Compacted area 1	S3102	810472	831240	60	17	--	0.50	5.00	2.50
	Manoeuvring area 1	S3103	810472	831228	60	10	--	0.50	5.00	2.50
	Daily cover 1	S3104	810472	831228	60	30	--	0.35	3.50	1.75
	Tipping Face 2	S3201	810532	831237	60	3	--	3.30	33.00	16.50
	Compacted area 2	S3202	810532	831240	60	17	--	0.50	5.00	2.50
Phase 4	Manoeuvring area 2	S3203	810532	831228	60	10	--	0.50	5.00	2.50
	Daily cover 2	S3204	810532	831228	60	30	--	0.35	3.50	1.75
	Special cell for animal carcasses	S3301	810502	831237	3	3	--	1.48	14.80	7.40
	Tipping Face 1	S4101	809945	830052	60	3	--	3.30	33.00	16.50
	Compacted area 1	S4102	809933	830039	60	17	--	0.50	5.00	2.50
	Manoeuvring area 1	S4103	809947	830054	60	10	--	0.50	5.00	2.50
	Daily cover 1	S4104	809933	830039	60	30	--	0.35	3.50	1.75
	Tipping Face 2	S4201	809998	830012	60	3	--	3.30	33.00	16.50
Phase 5	Compacted area 2	S4202	809994	829995	60	17	--	0.50	5.00	2.50
	Manoeuvring area 2	S4203	809998	830015	60	10	--	0.50	5.00	2.50
	Daily cover 2	S4204	809994	829995	60	30	--	0.35	3.50	1.75
	Special cell for animal carcasses	S4301	809967	830032	3	3	--	1.48	14.80	7.40
	Tipping Face 1	S5101	809415	830769	60	3	--	3.30	33.00	16.50
	Compacted area 1	S5102	809400	830762	60	17	--	0.50	5.00	2.50
	Manoeuvring area 1	S5103	809418	830770	60	10	--	0.50	5.00	2.50
	Daily cover 1	S5104	809400	830762	60	30	--	0.35	3.50	1.75
24-hour Emission <sup>(1)</sup>	Tipping Face 2	S5201	809441	830712	60	3	--	3.30	33.00	16.50
	Compacted area 2	S5202	809427	830703	60	17	--	0.50	5.00	2.50
	Manoeuvring area 2	S5203	809444	830714	60	10	--	0.50	5.00	2.50
	Daily cover 2	S5204	809427	830703	60	30	--	0.35	3.50	1.75
	Special cell for animal carcasses	S5301	809428	830742	3	3	--	1.48	14.80	7.40
	Deodourizer Unit - WENT Extension	DOU1	810348	831380	0.8 <sup>(2)</sup>		115.42 <sup>(3)</sup>	--	1154.20	577.10
	Deodourizer Unit - Existing WENT	DOU2	810627	831371	0.61 <sup>(2)</sup>		90.78 <sup>(3)</sup>	--	907.80	453.90
	Sludge Treatment Facilities 1	STF7	810506	831427	0.15 <sup>(2)</sup>		46.69	--	466.90	233.45
Sludge Treatment Facilities 2	STF8	810414	831517	0.7 <sup>(2)</sup>		85.61	--	856.10	428.05	

Note

[1] an odour removal efficiency of 99% has been adopted in the Corrected Emission Rate

[2] dimension in diameter (m)

[3] please refer to Detailed Calculations of Odour Emissions from Deodouriser Units

Detailed Calculations of Odour Emissions from Deodouriser Units

Odour Source	Odour Concentration	Radius	Quantity	Total Area	Emission Rate	Total Emission Rate	Odour Removal	Mitigated Emission Rate	Exit Temperature	Exit velocity	Internal diameter	Stack Height
	(OU/m <sup>2</sup> s)	(m)	-	(m <sup>2</sup> )	(OU/s)	(OU/s)	%	(OU/s)	(K)	(m/s)	(m)	(m)
<b>Deodourizer Unit - WENT Landfill Extension</b>	-	-	-	-	-	11541	99	115.415	298	20	0.80	10
Raw Leachate Storage	0.865	20	1	1257	1087	-	-	-	-	-	-	-
Pre-treated Leachate Storage	1.255	20	1	1257	1577	-	-	-	-	-	-	-
Buffer Storage	0.32	8	2	402	129	-	-	-	-	-	-	-
Effluent Storage	0.21	20	1	1257	264	-	-	-	-	-	-	-
SBR Tanks*	0.049	20	3	3770	185	-	-	-	-	-	-	-
Sludge Dewatering & Storage**	26.42	5	4	314	8300	-	-	-	-	-	-	-
<b>Deodourizer Unit - Existing WENT Landfill</b>	-	-	-	-	-	9078	99	90.783	298	20	0.61	10
Raw Leachate Storage	0.865	10	1	314	272	-	-	-	-	-	-	-
Pre-treated Leachate Storage	1.255	10	1	314	394	-	-	-	-	-	-	-
Effluent Storage	0.21	10	1	314	66	-	-	-	-	-	-	-
SBR Tanks*	0.049	10	3	942	46	-	-	-	-	-	-	-
Sludge Dewatering & Storage**	26.42	5	2	157	4150	-	-	-	-	-	-	-
Sludge Tank**	26.42	5	2	157	4150	-	-	-	-	-	-	-

Note \* Referenced from SENT Extension EIA

Note \*\* Reference from STF EIA