

Annex D7

Thermal Oxidizer, Landfill  
Gas Flare and Landfill Gas  
Generator Stack Emission  
Monitoring Results

**Table D7.1 Thermal Oxidiser Stack Emission Monitoring Results**

Parameters	Monitoring Results
NO <sub>2</sub>	0.38 gs <sup>-1</sup>
CO	0.047 gs <sup>-1</sup>
SO <sub>2</sub>	<0.015 gs <sup>-1</sup>
Benzene	<4 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<3 x 10 <sup>-5</sup> gs <sup>-1</sup>
Exhaust gas velocity	9.9 ms <sup>-1</sup>

**Table D7.2 Thermal Oxidiser Stack Continuous Monitoring Results**

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)
01 Jan 22	983	973	
02 Jan 22	963	963	
03 Jan 22	975	958	
04 Jan 22	971	961	
05 Jan 22	971	969	
06 Jan 22	974	970	
07 Jan 22	993	992	
08 Jan 22	982	969	
09 Jan 22	964	962	
10 Jan 22	973	959	
11 Jan 22	966	957	
12 Jan 22	966	950	
13 Jan 22	952	953	
14 Jan 22	987	968	
15 Jan 22	959	950	
16 Jan 22	963	950	9.9
17 Jan 22	975	970	
18 Jan 22	968	960	
19 Jan 22	956	945	
20 Jan 22	979	971	
21 Jan 22	968	968	
22 Jan 22	975	968	
23 Jan 22	970	974	
24 Jan 22	987	962	
25 Jan 22	971	959	
26 Jan 22	994	991	
27 Jan 22	967	959	
28 Jan 22	975	969	
29 Jan 22	968	957	
30 Jan 22	973	963	
31 Jan 22	968	961	
<b>Average</b>	972	1237	-
<b>Min</b>	952	1218	-
<b>Max</b>	994	1265	-

**Notes:**

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.

**Table D7.3 Landfill Gas Flare Stack Emission Monitoring Results**

Parameters	Monitoring Results	
	Flare 1 – F601	Flare 2 – F602
NO <sub>2</sub>	<0.01 gs <sup>-1</sup>	<0.01 gs <sup>-1</sup>
CO	0.032 gs <sup>-1</sup>	0.04 gs <sup>-1</sup>
SO <sub>2</sub>	0.09 gs <sup>-1</sup>	0.10 gs <sup>-1</sup>
Benzene	1.3 x 10 <sup>-5</sup> gs <sup>-1</sup>	1.6 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<1.1 x 10 <sup>-5</sup> gs <sup>-1</sup>	<1.3 x 10 <sup>-5</sup> gs <sup>-1</sup>
Exhaust gas velocity	4.3 ms <sup>-1</sup>	2.0 ms <sup>-1</sup>

**Table D7.4 Landfill Gas Flare Stack Continuous Monitoring Results**

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) <sup>(a)</sup>	Operation Status
<b>Flare 1 – F601</b>				
01 Jan 22	-	-		Standby
02 Jan 22	-	-		Standby
03 Jan 22	1072	1115		In Operation
04 Jan 22	907	1143		In Operation
05 Jan 22	920	1133		In Operation
06 Jan 22	931	1163		In Operation
07 Jan 22	891	1023		In Operation
08 Jan 22	929	1143		In Operation
09 Jan 22	-	-		Standby
10 Jan 22	1077	1183		In Operation
11 Jan 22	-	-		Standby
12 Jan 22	854	1028		In Operation
13 Jan 22	1156	1184		In Operation
14 Jan 22	968	1133		In Operation
15 Jan 22	999	1133		In Operation
16 Jan 22	1051	1133	4.3	In Operation
17 Jan 22	1171	1133		In Operation
18 Jan 22	-	-		Standby
19 Jan 22	1076	1189		In Operation
20 Jan 22	-	-		Standby
21 Jan 22	1064	1223		In Operation
22 Jan 22	1037	1163		In Operation
23 Jan 22	1087	1163		In Operation
24 Jan 22	992	1123		In Operation
25 Jan 22	1015	1223		In Operation
26 Jan 22	-	-		Standby
27 Jan 22	-	-		Standby
28 Jan 22	-	-		Standby
29 Jan 22	-	-		Standby
30 Jan 22	-	-		Standby
31 Jan 22	-	-		Standby
<b>Average</b>	1010	1144	-	
<b>Min</b>	854	1023	-	
<b>Max</b>	1171	1223	-	
<b>Flare 2 – F602</b>				
01 Jan 22	824	1058		In Operation
02 Jan 22	820	1060		In Operation
03 Jan 22	822	1061		In Operation
04 Jan 22	827	1071	2.0	In Operation
05 Jan 22	824	1049		In Operation
06 Jan 22	826	1069		In Operation
07 Jan 22	828	1069		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status
08 Jan 22	826	1074		In Operation
09 Jan 22	1082	1226		In Operation
10 Jan 22	908	1119		In Operation
11 Jan 22	970	1148		In Operation
12 Jan 22	905	1102		In Operation
13 Jan 22	923	1062		In Operation
14 Jan 22	904	1093		In Operation
15 Jan 22	1171	1099		In Operation
16 Jan 22	877	1283		In Operation
17 Jan 22	874	1061		In Operation
18 Jan 22	872	1067		In Operation
19 Jan 22	873	1060		In Operation
20 Jan 22	843	1045		In Operation
21 Jan 22	900	1120		In Operation
22 Jan 22	873	1096		In Operation
23 Jan 22	1080	1241		In Operation
24 Jan 22	933	1204		In Operation
25 Jan 22	905	1132		In Operation
26 Jan 22	965	1142		In Operation
27 Jan 22	997	1120		In Operation
28 Jan 22	939	1134		In Operation
29 Jan 22	967	1160		In Operation
30 Jan 22	957	1153		In Operation
31 Jan 22	1090	1223		In Operation
<b>Average</b>	916	1116	-	
<b>Min</b>	820	1045	-	
<b>Max</b>	1171	1283	-	

**Notes:**

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.

**Table D7.5 Landfill Gas Generator Stack Emission Monitoring Results**

Parameters	Monitoring Results
NO <sub>2</sub>	0.008 gs <sup>-1</sup>
CO	0.050 gs <sup>-1</sup>
SO <sub>2</sub>	0.009 gs <sup>-1</sup>
Benzene	2 x 10 <sup>-6</sup> gs <sup>-1</sup>
Vinyl chloride	<1.3 x 10 <sup>-6</sup> gs <sup>-1</sup>
Exhaust gas velocity	7.8 ms <sup>-1</sup>

**Table D7.6 Landfill Gas Generator Stack Continuous Monitoring Results**

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status (Landfill Gas Generator in Operation)
01 Jan 22	840		In Operation (ENGB)
02 Jan 22	839		In Operation (ENGB)
03 Jan 22	839		In Operation (ENGB)
04 Jan 22	842		In Operation (ENGB)
05 Jan 22	842		In Operation (ENGB)
06 Jan 22	841		In Operation (ENGB)
07 Jan 22	841		In Operation (ENGB)
08 Jan 22	835		In Operation (ENGB)
09 Jan 22	840		In Operation (ENGB)
10 Jan 22	839		In Operation (ENGB)
11 Jan 22	841		In Operation (ENGB)
12 Jan 22	839		In Operation (ENGB)
13 Jan 22	-		Under maintenance
14 Jan 22	845		In Operation (ENGA)
15 Jan 22	838		In Operation (ENGA)
16 Jan 22	853	7.8	In Operation (ENGA)
17 Jan 22	836		In Operation (ENGA)
18 Jan 22	844		In Operation (ENGA)
19 Jan 22	843		In Operation (ENGA)
20 Jan 22	846		In Operation (ENGA)
21 Jan 22	846		In Operation (ENGA)
22 Jan 22	849		In Operation (ENGA)
23 Jan 22	840		In Operation (ENGA)
24 Jan 22	846		In Operation (ENGA)
25 Jan 22	846		In Operation (ENGA)
26 Jan 22	847		In Operation (ENGA)
27 Jan 22	848		In Operation (ENGA)
28 Jan 22	847		In Operation (ENGA)
29 Jan 22	847		In Operation (ENGA)
30 Jan 22	843		In Operation (ENGA)
31 Jan 22	847		In Operation (ENGA)
<b>Average</b>	843	-	
<b>Min</b>	835	-	
<b>Max</b>	853	-	

**Notes:**

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.