

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>	1.54 gs <sup>-1</sup>
CO	0.04 gs <sup>-1</sup>
SO <sub>2</sub>	<0.01 gs <sup>-1</sup>
Benzene	<3 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<2 x 10 <sup>-5</sup> gs <sup>-1</sup>
Exhaust gas velocity	9.1 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)
1 Mar 22	970	1230	
2 Mar 22	971	1221	
3 Mar 22	983	1244	
4 Mar 22	969	1223	
5 Mar 22	975	1234	
6 Mar 22	964	1219	
7 Mar 22	1015	1222	
8 Mar 22	983	1230	
9 Mar 22	974	1231	
10 Mar 22	972	1221	
11 Mar 22	969	1235	
12 Mar 22	979	1237	
13 Mar 22	959	1223	
14 Mar 22	981	1232	
15 Mar 22	993	1248	
16 Mar 22	978	1227	9.1
17 Mar 22	971	1232	
18 Mar 22	978	1233	
19 Mar 22	974	1228	
20 Mar 22	968	1222	
21 Mar 22	967	1225	
22 Mar 22	1028	1276	
23 Mar 22	Under maintenance		
24 Mar 22	1035	1246	
25 Mar 22	962	1214	
26 Mar 22	967	1217	
27 Mar 22	960	1218	
28 Mar 22	984	1236	
29 Mar 22	982	1223	
30 Mar 22	977	1234	
31 Mar 22	967	1228	
<b>Average</b>	979	1230	-
<b>Min</b>	959	1214	-
<b>Max</b>	1035	1276	-

**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 2 - F602)
NO <sub>2</sub>	0.02 gs <sup>-1</sup>
CO	0.056 gs <sup>-1</sup>
SO <sub>2</sub>	0.007 gs <sup>-1</sup>
Benzene	<1.2 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<1 x 10 <sup>-5</sup> gs <sup>-1</sup>
Exhaust gas velocity	3.9 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> ) (a)	Operation Status
<b>Flare 1 - F601</b>				
1 Mar 22	-	-		Standby
2 Mar 22	-	-		Standby
3 Mar 22	-	-		Standby
4 Mar 22	986	1181		In operation
5 Mar 22	-	-		Standby
6 Mar 22	-	-		Standby
7 Mar 22	-	-		Standby
8 Mar 22	-	-		Standby
9 Mar 22	880	1133		In operation
10 Mar 22	-	-		Standby
11 Mar 22	-	-		Standby
12 Mar 22	-	-		Standby
13 Mar 22	-	-		Standby
14 Mar 22	-	-		Standby
15 Mar 22	-	-		Standby
16 Mar 22	-	-	3.9	Standby
17 Mar 22	-	-		Standby
18 Mar 22	-	-		Standby
19 Mar 22	-	-		Standby
20 Mar 22	-	-		Standby
21 Mar 22	-	-		Standby
22 Mar 22	-	-		Standby
23 Mar 22	-	-		Standby
24 Mar 22	-	-		Standby
25 Mar 22	-	-		Standby
26 Mar 22	990	1223		In operation
27 Mar 22	830	1093		In operation
28 Mar 22	880	1113		In operation
29 Mar 22	860	1073		In operation
30 Mar 22	-	-		Standby
31 Mar 22	950	1173		In operation
<b>Average</b>	911	1141	-	
<b>Min</b>	830	1073	-	
<b>Max</b>	990	1223	-	
<b>Flare 2 - F602</b>				
1 Mar 22	850	1043		In operation
2 Mar 22	850	1043		In operation
3 Mar 22	850	1055		In operation
4 Mar 22	850	1053		In operation
5 Mar 22	860	1083	3.9	In operation
6 Mar 22	830	1053		In operation
7 Mar 22	850	1083		In operation
8 Mar 22	840	1073		In operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status
9 Mar 22	880	1033		In operation
10 Mar 22	880	1103		In operation
11 Mar 22	860	1093		In operation
12 Mar 22	850	1113		In operation
13 Mar 22	870	1073		In operation
14 Mar 22	880	1123		In operation
15 Mar 22	830	1073		In operation
16 Mar 22	840	1083		In operation
17 Mar 22	830	1073		In operation
18 Mar 22	880	1093		In operation
19 Mar 22	840	1073		In operation
20 Mar 22	830	1093		In operation
21 Mar 22	850	1093		In operation
22 Mar 22	-	-		Standby
23 Mar 22	820	1043		In operation
24 Mar 22	880	1083		In operation
25 Mar 22	850	1063		In operation
26 Mar 22	880	1083		In operation
27 Mar 22	840	1073		In operation
28 Mar 22	-	-		Standby
29 Mar 22	-	-		Standby
30 Mar 22	840	1083		In operation
31 Mar 22	890	1113		In operation
<b>Average</b>	854	1077	-	
<b>Min</b>	820	1033	-	
<b>Max</b>	890	1123	-	

**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>	0.022 gs <sup>-1</sup>
CO	0.06 gs <sup>-1</sup>
SO <sub>2</sub>	<0.001 gs <sup>-1</sup>
Benzene	<2 x 10 <sup>-6</sup> gs <sup>-1</sup>
Vinyl chloride	<1.9 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)
1 Mar 22	842		In Operation (ENGA)
2 Mar 22	844		In Operation (ENGA)
3 Mar 22	841		In Operation (ENGB)
4 Mar 22	843		In Operation (ENGB)
5 Mar 22	845		In Operation (ENGB)
6 Mar 22	844		In Operation (ENGB)
7 Mar 22	841		In Operation (ENGB)
8 Mar 22	840		In Operation (ENGB)
9 Mar 22	842		In Operation (ENGB)
10 Mar 22	842		In Operation (ENGB)
11 Mar 22	842		In Operation (ENGB)
12 Mar 22	844		In Operation (ENGB)
13 Mar 22	844		In Operation (ENGB)
14 Mar 22	844		In Operation (ENGB)
15 Mar 22	845		In Operation (ENGB)
16 Mar 22	846	7.8	In Operation (ENGB)
17 Mar 22	846		In Operation (ENGB)
18 Mar 22	847		In Operation (ENGB)
19 Mar 22	847		In Operation (ENGB)
20 Mar 22	848		In Operation (ENGB)
21 Mar 22	847		In Operation (ENGB)
22 Mar 22	849		In Operation (ENGB)
23 Mar 22	846		In Operation (ENGB)
24 Mar 22	842		In Operation (ENGB)
25 Mar 22	844		In Operation (ENGB)
26 Mar 22	850		In Operation (ENGB)
27 Mar 22	850		In Operation (ENGB)
28 Mar 22	843		In Operation (ENGB)
29 Mar 22	841		In Operation (ENGB)
30 Mar 22	846		In Operation (ENGB)
31 Mar 22	846		In Operation (ENGB)
<b>Average</b>	845	-	
<b>Min</b>	840	-	
<b>Max</b>	850	-	

**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.