

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>	0.35 gs <sup>-1</sup>
CO	<0.01 gs <sup>-1</sup>
SO <sub>2</sub>	<0.01 gs <sup>-1</sup>
Benzene	1.0 x 10 <sup>-4</sup> gs <sup>-1</sup>
Vinyl chloride	<1.0 x 10 <sup>-4</sup> gs <sup>-1</sup>
Non-Methane Organic Carbons (NMOC)	<3.0 x 10 <sup>-3</sup> gs <sup>-1</sup>
Ammonia	0.0227 gs <sup>-1</sup>
Exhaust gas velocity	9.3 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> ) <sup>(a)</sup>
1 May 23	922	1281	
2 May 23	914	1269	
3 May 23	909	1272	
4 May 23	895	1264	
5 May 23	880	1254	
6 May 23	880	1260	
7 May 23	880	1262	
8 May 23	906	1246	
9 May 23	882	1267	
10 May 23	893	1282	
11 May 23	883	1271	
12 May 23	893	1263	
13 May 23	871	1266	
14 May 23	871	1269	
15 May 23	869	1270	
16 May 23	869	1271	9.3
17 May 23	867	1275	
18 May 23	858	1250	
19 May 23	859	1255	
20 May 23	860	1257	
21 May 23	863	1263	
22 May 23	860	1268	
23 May 23	858	1260	
24 May 23	855	1260	
25 May 23	855	1262	
26 May 23	861	1271	
27 May 23	856	1265	
28 May 23	858	1254	
29 May 23	865	1270	
30 May 23	860	1268	
31 May 23	857	1262	
<b>Average</b>	874	1265	-
<b>Min</b>	855	1246	-
<b>Max</b>	922	1282	-

**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)
NO <sub>2</sub>	0.03 gs <sup>-1</sup>
CO	0.33 gs <sup>-1</sup>
SO <sub>2</sub>	<0.01 gs <sup>-1</sup>
Benzene	<4.47 x 10 <sup>-4</sup> gs <sup>-1</sup>
Vinyl chloride	<1.07 x 10 <sup>-4</sup> gs <sup>-1</sup>
Non-Methane Organic Carbons (NMOC)	0.003 gs <sup>-1</sup>
Exhaust gas velocity	8.7 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 May 23	954	1053		In Operation
2 May 23	820	1063		In Operation
3 May 23	860	1003		In Operation
4 May 23	930	1093		In Operation
5 May 23	940	1033		In Operation
6 May 23	990	1053		In Operation
7 May 23	870	1053		In Operation
8 May 23	840	1053		In Operation
9 May 23	870	1073		In Operation
10 May 23	900	1043		In Operation
11 May 23	900	1093		In Operation
12 May 23	840	1043		In Operation
13 May 23	920	1143		In Operation
14 May 23	830	1053		In Operation
15 May 23	870	1093	8.7	In Operation
16 May 23	850	1093		In Operation
17 May 23	930	1043		In Operation
18 May 23	860	1003		In Operation
19 May 23	920	1163		In Operation
20 May 23	840	1023		In Operation
21 May 23	940	1033		In Operation
22 May 23	850	1083		In Operation
23 May 23	890	1103		In Operation
24 May 23	880	1083		In Operation
25 May 23	880	1103		In Operation
26 May 23	855	1023		In Operation
27 May 23	860	1003		In Operation
28 May 23	830	1053		In Operation
29 May 23	840	1013		In Operation
30 May 23	850	1023		In Operation
31 May 23	840	1023		In Operation
<b>Average</b>	879	1059	-	
<b>Min</b>	820	1003	-	
<b>Max</b>	990	1163	-	
<b>Flare 2 - F602</b>				
1 May 23	890	1113		In Operation
2 May 23	920	1033		In Operation
3 May 23	890	1083		In Operation
4 May 23	850	1003		In Operation
5 May 23	830	1073		In Operation
6 May 23	910	1033		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status
7 May 23	860	1043		In Operation
8 May 23	880	1123		In Operation
9 May 23	890	1013		In Operation
10 May 23	830	1073		In Operation
11 May 23	880	1033		In Operation
12 May 23	890	1053		In Operation
13 May 23	890	1093		In Operation
14 May 23	860	1083		In Operation
15 May 23	880	1123	8.7	In Operation
16 May 23	840	1073		In Operation
17 May 23	890	1043		In Operation
18 May 23	870	1083		In Operation
19 May 23	900	1113		In Operation
20 May 23	890	1113		In Operation
21 May 23	900	1123		In Operation
22 May 23	900	1113		In Operation
23 May 23	880	1073		In Operation
24 May 23	890	1093		In Operation
25 May 23	880	1083		In Operation
26 May 23	860	1073		In Operation
27 May 23	890	1103		In Operation
28 May 23	880	1103		In Operation
29 May 23	870	1093		In Operation
30 May 23	830	1033		In Operation
31 May 23	900	1113		In Operation
<b>Average</b>	878	1078	-	
<b>Min</b>	830	1003	-	
<b>Max</b>	920	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>	0.030 gs <sup>-1</sup>
CO	0.853 gs <sup>-1</sup>
SO <sub>2</sub>	<0.001 gs <sup>-1</sup>
Benzene	5.9 × 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<1.2 × 10 <sup>-5</sup> gs <sup>-1</sup>
Non-Methane Organic Carbons (NMOC)	1.9 × 10 <sup>-3</sup> gs <sup>-1</sup>
Exhaust gas velocity	12.9 ms <sup>-1</sup>

(a) The Landfill Gas Generator was under maintenance in the reporting period.

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

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status
<b>ENGA</b>			
1 May 23	-		Under Maintenance
2 May 23	-		Under Maintenance
3 May 23	-		Under Maintenance
4 May 23	-		Under Maintenance
5 May 23	-		Under Maintenance
6 May 23	876		In Operation
7 May 23	872		In Operation
8 May 23	871		In Operation
9 May 23	-		Under Maintenance
10 May 23	869		In Operation
11 May 23	872		In Operation
12 May 23	-		Under Maintenance
13 May 23	-		Under Maintenance
14 May 23	-		Under Maintenance
15 May 23	872		In Operation
16 May 23	870	12.9	In Operation
17 May 23	876		In Operation
18 May 23	877		In Operation
19 May 23	878		In Operation
20 May 23	879		In Operation
21 May 23	877		In Operation
22 May 23	877		In Operation
23 May 23	873		In Operation
24 May 23	873		In Operation
25 May 23	875		In Operation
26 May 23	875		In Operation
27 May 23	864		In Operation
28 May 23	862		In Operation
29 May 23	875		In Operation
30 May 23	877		In Operation
31 May 23	873		In Operation
<b>Average</b>	873	-	
<b>Min</b>	862	-	
<b>Max</b>	879	-	
<b>ENGB</b>			
1 May 23	860		In Operation
2 May 23	862		In Operation
3 May 23	864		In Operation
4 May 23	865		In Operation
5 May 23	870		In Operation

<b>Date</b>	<b>Exhaust Temperature (K)</b>	<b>Exhaust Gas Velocity (ms<sup>-1</sup>) (a)</b>	<b>Operation Status</b>
6 May 23	-		Under Maintenance
7 May 23	-		Under Maintenance
8 May 23	-		Under Maintenance
9 May 23	861		In Operation
10 May 23	-		Under Maintenance
11 May 23	868		In Operation
12 May 23	868	12.9	In Operation
13 May 23	868		In Operation
14 May 23	867		In Operation
15 May 23	-		Under Maintenance
16 May 23	-		Under Maintenance
17 May 23	-		Under Maintenance
18 May 23	-		Under Maintenance
19 May 23	-		Under Maintenance
20 May 23	-		Under Maintenance
21 May 23	-		Under Maintenance
22 May 23	-		Under Maintenance
23 May 23	-		Under Maintenance
24 May 23	-		Under Maintenance
25 May 23	-		Under Maintenance
26 May 23	-		Under Maintenance
27 May 23	-		Under Maintenance
28 May 23	-		Under Maintenance
29 May 23	-		Under Maintenance
30 May 23	-		Under Maintenance
31 May 23	-		Under Maintenance
<b>Average</b>	865	-	
<b>Min</b>	860	-	
<b>Max</b>	870	-	

**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.