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_2	0.38 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<2 x 10^{-4} gs^{-1}
Vinyl chloride	<1.3 x 10^{-4} gs^{-1}
Ammonia	0.0414 gs^{-1}
Exhaust gas velocity	11.2 ms^{-1}

Table D7.2 Thermal Oxidiser Stack Continuous Monitoring Results

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms^{-1}) [(a)]
1-Sep-22	923	1236	
2-Sep-22	925	1225	
3-Sep-22	930	1239	
4-Sep-22	921	1235	
5-Sep-22	917	1235	
6-Sep-22	925	1233	
7-Sep-22	926	1234	
8-Sep-22	932	1240	
9-Sep-22	912	1234	
10-Sep-22	923	1236	
11-Sep-22	925	1237	
12-Sep-22	928	1237	
13-Sep-22	924	1236	
14-Sep-22	926	1231	
15-Sep-22	921	1235	11.2
16-Sep-22	926	1238	
17-Sep-22	924	1236	
18-Sep-22	922	1235	
19-Sep-22	932	1242	
20-Sep-22	929	1248	
21-Sep-22	923	1242	
22-Sep-22	925	1244	
23-Sep-22	922	1242	
24-Sep-22	920	1239	
25-Sep-22	921	1241	
26-Sep-22	924	1244	
27-Sep-22	922	1242	
28-Sep-22	925	1244	
29-Sep-22	920	1243	
30-Sep-22	917	1239	
Average	924	1238	-
Min	912	1225	-
Max	932	1248	-

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_2	<0.02 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<1.23 x 10^{-4} gs^{-1}
Vinyl chloride	<9.8 x 10^{-5} gs^{-1}
Exhaust gas velocity	8.9 ms^{-1}

Table D7.4 Landfill Gas Flare Stack Continuous Monitoring Results

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms^{-1}) [a]	Operation Status
Flare 1 – F601				
1-Sep-22	828	991		In Operation
2-Sep-22	839	1035		In Operation
3-Sep-22	901	1036		In Operation
4-Sep-22	840	1091		In Operation
5-Sep-22	869	1127		In Operation
6-Sep-22	875	1003		In Operation
7-Sep-22	892	1033		In Operation
8-Sep-22	875	996		In Operation
9-Sep-22	877	1004		In Operation
10-Sep-22	865	1027		In Operation
11-Sep-22	-	-		Under Maintenance
12-Sep-22	-	-		Under Maintenance
13-Sep-22	838	1073		In Operation
14-Sep-22	883	1056		In Operation
15-Sep-22	894	1020	8.9	In Operation
16-Sep-22	881	1003		In Operation
17-Sep-22	859	1103		In Operation
18-Sep-22	944	1077		In Operation
19-Sep-22	890	1113		In Operation
20-Sep-22	868	1005		In Operation
21-Sep-22	873	987		In Operation
22-Sep-22	890	987		In Operation
23-Sep-22	820	1067		In Operation
24-Sep-22	824	1073		In Operation
25-Sep-22	-	-		Under Maintenance
26-Sep-22	848	1099		In Operation
27-Sep-22	-	-		Under Maintenance
28-Sep-22	840	1047		In Operation
29-Sep-22	868	1113		In Operation
30-Sep-22	822	1033		In Operation
Average	866	1046	-	
Min	820	987	-	
Max	944	1127	-	
Flare 2 – F602				
1-Sep-22	876	1061		In Operation
2-Sep-22	821	1049		In Operation
3-Sep-22	826	1056		In Operation
4-Sep-22	948	1127	8.9	In Operation
5-Sep-22	847	1047		In Operation
6-Sep-22	830	1071		In Operation
7-Sep-22	833	1047		In Operation
8-Sep-22	860	1103		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms^{-1}) (a)	Operation Status
9-Sep-22	852	1069		In Operation
10-Sep-22	895	1111		In Operation
11-Sep-22	-	-		Under Maintenance
12-Sep-22	-	-		Under Maintenance
13-Sep-22	832	1088		In Operation
14-Sep-22	828	1055		In Operation
15-Sep-22	876	1058		In Operation
16-Sep-22	877	1093		In Operation
17-Sep-22	850	1083		In Operation
18-Sep-22	899	1119		In Operation
19-Sep-22	870	1096		In Operation
20-Sep-22	890	1108		In Operation
21-Sep-22	880	1097		In Operation
22-Sep-22	854	1051		In Operation
23-Sep-22	880	1098		In Operation
24-Sep-22	834	1088		In Operation
25-Sep-22	844	1096		In Operation
26-Sep-22	830	1057		In Operation
27-Sep-22	912	1125		In Operation
28-Sep-22	825	1046		In Operation
29-Sep-22	850	1068		In Operation
30-Sep-22	883	1083		In Operation
Average	861	1080	-	
Min	821	1046	-	
Max	948	1127	-	

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_2	0.07 gs^{-1}
CO	0.75 gs^{-1}
SO_2	0.008 gs^{-1}
Benzene	<1.92 x 10^{-4} gs^{-1}
Vinyl chloride	<9.6 x 10^{-6} gs^{-1}
Exhaust gas velocity	10.2 ms^{-1}

Table D7.6 Landfill Gas Generator Stack Continuous Monitoring Results

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms^{-1}) [(a)]	Operation Status (Landfill Gas Generator in Operation)
1-Sep-22	865		In Operation (ENGA)
2-Sep-22	867		In Operation (ENGA)
3-Sep-22	858		In Operation (ENGA)
4-Sep-22	860		In Operation (ENGA)
5-Sep-22	860		In Operation (ENGA)
6-Sep-22	863		In Operation (ENGA)
7-Sep-22	864		In Operation (ENGA)
8-Sep-22	880		In Operation (ENGA)
9-Sep-22	861		In Operation (ENGA)
10-Sep-22	856		In Operation (ENGA)
11-Sep-22	856		In Operation (ENGA)
12-Sep-22	854		In Operation (ENGA)
13-Sep-22	Under Maintenance		-
14-Sep-22	856		In Operation (ENGA)
15-Sep-22	853	10.2	In Operation (ENGA)
16-Sep-22	859		In Operation (ENGA)
17-Sep-22	863		In Operation (ENGA)
18-Sep-22	855		In Operation (ENGA)
19-Sep-22	863		In Operation (ENGA)
20-Sep-22	862		In Operation (ENGA)
21-Sep-22	858		In Operation (ENGA)
22-Sep-22	862		In Operation (ENGA)
23-Sep-22	860		In Operation (ENGA)
24-Sep-22	859		In Operation (ENGA)
25-Sep-22	860		In Operation (ENGA)
26-Sep-22	861		In Operation (ENGA)
27-Sep-22	860		In Operation (ENGA)
28-Sep-22	863		In Operation (ENGA)
29-Sep-22	864		In Operation (ENGA)
30-Sep-22	852		In Operation (ENGA)
Average	860	-	
Min	852	-	
Max	880	-	
1-Sep-22	865		In Operation (ENGB)
2-Sep-22	867		In Operation (ENGB)
3-Sep-22	857		In Operation (ENGB)
4-Sep-22	856		In Operation (ENGB)
5-Sep-22	855		In Operation (ENGB)
6-Sep-22	857		In Operation (ENGB)
7-Sep-22	856		In Operation (ENGB)
8-Sep-22	Under Maintenance		-
9-Sep-22	845		In Operation (ENGB)
10-Sep-22	856		In Operation (ENGB)
11-Sep-22	857		In Operation (ENGB)

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms^{-1}) [(a)]	Operation Status (Landfill Gas Generator in Operation)
12-Sep-22	854	10.2	In Operation (ENGB)
13-Sep-22	879		In Operation (ENGB)
14-Sep-22	855		In Operation (ENGB)
15-Sep-22	851		In Operation (ENGB)
16-Sep-22	856		In Operation (ENGB)
17-Sep-22	859		In Operation (ENGB)
18-Sep-22	851		In Operation (ENGB)
19-Sep-22	855		In Operation (ENGB)
20-Sep-22	851		In Operation (ENGB)
21-Sep-22	856		In Operation (ENGB)
22-Sep-22	860		In Operation (ENGB)
23-Sep-22	859		In Operation (ENGB)
24-Sep-22	857		In Operation (ENGB)
25-Sep-22	859		In Operation (ENGB)
26-Sep-22	862		In Operation (ENGB)
27-Sep-22	861		In Operation (ENGB)
28-Sep-22	860		In Operation (ENGB)
29-Sep-22	863		In Operation (ENGB)
30-Sep-22	848		In Operation (ENGB)
Average	857	-	
Min	845	-	
Max	879	-	

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.