



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 | 0.67 gs ⁻¹ |
| CO | 0.02 gs ⁻¹ |
| SO ₂ | <0.01 gs ⁻¹ |
| Benzene | 3.0 x 10 ⁻⁴ gs ⁻¹ |
| Vinyl chloride | <1.2 x 10 ⁻⁴ gs ⁻¹ |
| Exhaust gas velocity | 9.6 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 24 | 908 | 1201 | 9.6 | |
| 2 Sep 24 | 895 | 1198 | | |
| 3 Sep 24 | 895 | 1197 | | |
| 4 Sep 24 | 898 | 1196 | | |
| 5 Sep 24 | 902 | 1198 | | |
| 6 Sep 24 | 898 | 1194 | | |
| 7 Sep 24 | 897 | 1193 | | |
| 8 Sep 24 | 900 | 1194 | | |
| 9 Sep 24 | 897 | 1192 | | |
| 10 Sep 24 | 903 | 1198 | | |
| 11 Sep 24 | 903 | 1194 | | |
| 12 Sep 24 | 900 | 1196 | | |
| 13 Sep 24 | 893 | 1194 | | |
| 14 Sep 24 | 901 | 1197 | | |
| 15 Sep 24 | 904 | 1199 | | |
| 16 Sep 24 | 899 | 1196 | | |
| 17 Sep 24 | Under maintenance | | | |
| 18 Sep 24 | 915 | 1188 | | |
| 19 Sep 24 | 932 | 1205 | | |
| 20 Sep 24 | 931 | 1204 | | |
| 21 Sep 24 | 928 | 1201 | | |
| 22 Sep 24 | 929 | 1202 | | |
| 23 Sep 24 | 923 | 1196 | | |
| 24 Sep 24 | 929 | 1202 | | |
| 25 Sep 24 | 931 | 1204 | | |
| 26 Sep 24 | 928 | 1201 | | |
| 27 Sep 24 | 931 | 1204 | | |
| 28 Sep 24 | 929 | 1202 | | |
| 29 Sep 24 | 929 | 1202 | | |
| 30 Sep 24 | 929 | 1202 | | |
| Average | 899 | 1198 | - | |
| Min | 893 | 1188 | - | |
| Max | 908 | 1205 | - | |

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 |
|----------------------|---|
| NO ₂ | 0.01 gs ⁻¹ |
| CO | 0.04 gs ⁻¹ |
| SO ₂ | <0.01 gs ⁻¹ |
| Benzene | <0.94 x 10 ⁻⁵ gs ⁻¹ |
| Vinyl chloride | <7.5 x 10 ⁻⁵ gs ⁻¹ |
| Exhaust gas velocity | 5.9 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 24 | 887 | 1151 | 5.9 | In Operation |
| 2 Sep 24 | 838 | 1103 | | In Operation |
| 3 Sep 24 | 858 | 1119 | | In Operation |
| 4 Sep 24 | 882 | 1147 | | In Operation |
| 5 Sep 24 | 829 | 1094 | | In Operation |
| 6 Sep 24 | 826 | 1091 | | In Operation |
| 7 Sep 24 | 829 | 1096 | | In Operation |
| 8 Sep 24 | 824 | 1090 | | In Operation |
| 9 Sep 24 | 859 | 1126 | | In Operation |
| 10 Sep 24 | 844 | 1105 | | In Operation |
| 11 Sep 24 | 847 | 1111 | | In Operation |
| 12 Sep 24 | 878 | 1143 | | In Operation |
| 13 Sep 24 | 877 | 1139 | | In Operation |
| 14 Sep 24 | 837 | 1101 | | In Operation |
| 15 Sep 24 | 872 | 1139 | | In Operation |
| 16 Sep 24 | 874 | 1136 | | In Operation |
| 17 Sep 24 | 828 | 1092 | | In Operation |
| 18 Sep 24 | 846 | 1111 | | In Operation |
| 19 Sep 24 | 874 | 1135 | | In Operation |
| 20 Sep 24 | 853 | 1115 | | In Operation |
| 21 Sep 24 | 860 | 1116 | | In Operation |
| 22 Sep 24 | 840 | 1091 | | In Operation |
| 23 Sep 24 | 855 | 1099 | | In Operation |
| 24 Sep 24 | 844 | 1108 | | In Operation |
| 25 Sep 24 | 833 | 1092 | | In Operation |
| 26 Sep 24 | 835 | 1101 | | In Operation |
| 27 Sep 24 | 872 | 1131 | | In Operation |
| 28 Sep 24 | 862 | 1120 | | In Operation |
| 29 Sep 24 | 830 | 1098 | | In Operation |
| 30 Sep 24 | 858 | 1125 | | In Operation |
| Average | 852 | 1114 | - | |
| Min | 824 | 1090 | - | |
| Max | 887 | 1151 | - | |

| Date | Gas Combustion Temperature (°C) | Exhaust Temperature (K) | Exhaust Gas Velocity (ms ⁻¹) (a) | Operation Status |
|-----------------------|---------------------------------|-------------------------|--|------------------|
| Flare 2 – F602 | | | | |
| 1 Sep 24 | 901 | 1162 | 5.9 | In Operation |
| 2 Sep 24 | 887 | 1148 | | In Operation |
| 3 Sep 24 | 893 | 1151 | | In Operation |
| 4 Sep 24 | 929 | 1195 | | In Operation |
| 5 Sep 24 | 870 | 1129 | | In Operation |
| 6 Sep 24 | 878 | 1146 | | In Operation |
| 7 Sep 24 | 876 | 1143 | | In Operation |
| 8 Sep 24 | 885 | 1143 | | In Operation |
| 9 Sep 24 | 878 | 1143 | | In Operation |
| 10 Sep 24 | 887 | 1148 | | In Operation |
| 11 Sep 24 | 877 | 1137 | | In Operation |
| 12 Sep 24 | 899 | 1159 | | In Operation |
| 13 Sep 24 | 907 | 1173 | | In Operation |
| 14 Sep 24 | 857 | 1122 | | In Operation |
| 15 Sep 24 | 919 | 1181 | | In Operation |
| 16 Sep 24 | 915 | 1178 | | In Operation |
| 17 Sep 24 | 892 | 1157 | | In Operation |
| 18 Sep 24 | 884 | 1152 | | In Operation |
| 19 Sep 24 | 927 | 1194 | | In Operation |
| 20 Sep 24 | 873 | 1135 | | In Operation |
| 21 Sep 24 | 873 | 1133 | | In Operation |
| 22 Sep 24 | 882 | 1145 | | In Operation |
| 23 Sep 24 | 891 | 1158 | | In Operation |
| 24 Sep 24 | 878 | 1136 | | In Operation |
| 25 Sep 24 | 885 | 1151 | | In Operation |
| 26 Sep 24 | 879 | 1140 | | In Operation |
| 27 Sep 24 | 908 | 1174 | | In Operation |
| 28 Sep 24 | 903 | 1165 | | In Operation |
| 29 Sep 24 | 866 | 1127 | | In Operation |
| 30 Sep 24 | 913 | 1171 | | In Operation |
| Average | 890 | 1153 | - | |
| Min | 857 | 1122 | - | |
| Max | 929 | 1195 | - | |

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 | 0.039 gs ⁻¹ |
| CO | 0.740 gs ⁻¹ |
| SO ₂ | <0.001 gs ⁻¹ |
| Benzene | 5.9 x 10 ⁻⁵ gs ⁻¹ |
| Vinyl chloride | <8.2 x 10 ⁻⁶ gs ⁻¹ |
| Exhaust gas velocity | 9.0 ms ⁻¹ |

TABLE D7.6 LANDFILL GAS GENERATOR STACK CONTINUOUS MONITORING RESULTS

| Date | Exhaust Temperature (K) | Exhaust Gas Velocity (ms ⁻¹) ^(a) | Operation Status |
|----------------|-------------------------|---|-------------------|
| ENGA | | | |
| 1 Sep 24 | - | 9.0 | Under Maintenance |
| 2 Sep 24 | 847 | | In Operation |
| 3 Sep 24 | 845 | | In Operation |
| 4 Sep 24 | 845 | | In Operation |
| 5 Sep 24 | 843 | | In Operation |
| 6 Sep 24 | 842 | | In Operation |
| 7 Sep 24 | 844 | | In Operation |
| 8 Sep 24 | 842 | | In Operation |
| 9 Sep 24 | 838 | | In Operation |
| 10 Sep 24 | 849 | | In Operation |
| 11 Sep 24 | 842 | | In Operation |
| 12 Sep 24 | 884 | | In Operation |
| 13 Sep 24 | 846 | | In Operation |
| 14 Sep 24 | 847 | | In Operation |
| 15 Sep 24 | 848 | | In Operation |
| 16 Sep 24 | 862 | | In Operation |
| 17 Sep 24 | 854 | | In Operation |
| 18 Sep 24 | 845 | | In Operation |
| 19 Sep 24 | 847 | | In Operation |
| 20 Sep 24 | 845 | | In Operation |
| 21 Sep 24 | 848 | | In Operation |
| 22 Sep 24 | 853 | | In Operation |
| 23 Sep 24 | 854 | | In Operation |
| 24 Sep 24 | 856 | | In Operation |
| 25 Sep 24 | 847 | | In Operation |
| 26 Sep 24 | 847 | | In Operation |
| 27 Sep 24 | 848 | | In Operation |
| 28 Sep 24 | 860 | | In Operation |
| 29 Sep 24 | 841 | | In Operation |
| 30 Sep 24 | 841 | | In Operation |
| Average | 849 | - | |
| Min | 838 | - | |
| Max | 884 | - | |

| Date | Exhaust Temperature (K) | Exhaust Gas Velocity (ms ⁻¹) ^(a) | Operation Status |
|----------------|-------------------------|---|------------------|
| ENGB | | | |
| 1 Sep 24 | 871 | 9.0 | In Operation |
| 2 Sep 24 | 839 | | In Operation |
| 3 Sep 24 | 835 | | In Operation |
| 4 Sep 24 | 836 | | In Operation |
| 5 Sep 24 | 834 | | In Operation |
| 6 Sep 24 | 833 | | In Operation |
| 7 Sep 24 | 835 | | In Operation |
| 8 Sep 24 | 833 | | In Operation |
| 9 Sep 24 | 830 | | In Operation |
| 10 Sep 24 | 841 | | In Operation |
| 11 Sep 24 | 834 | | In Operation |
| 12 Sep 24 | 868 | | In Operation |
| 13 Sep 24 | 837 | | In Operation |
| 14 Sep 24 | 838 | | In Operation |
| 15 Sep 24 | 839 | | In Operation |
| 16 Sep 24 | 864 | | In Operation |
| 17 Sep 24 | 869 | | In Operation |
| 18 Sep 24 | 836 | | In Operation |
| 19 Sep 24 | 838 | | In Operation |
| 20 Sep 24 | 836 | | In Operation |
| 21 Sep 24 | 839 | | In Operation |
| 22 Sep 24 | 864 | | In Operation |
| 23 Sep 24 | 868 | | In Operation |
| 24 Sep 24 | 869 | | In Operation |
| 25 Sep 24 | 839 | | In Operation |
| 26 Sep 24 | 838 | | In Operation |
| 27 Sep 24 | 840 | | In Operation |
| 28 Sep 24 | 867 | | In Operation |
| 29 Sep 24 | 833 | | In Operation |
| 30 Sep 24 | 833 | | In Operation |
| Average | 845 | - | |
| Min | 838 | - | |
| Max | 884 | - | |

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.