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| Permit Number: Facility: | EPR/FP3435LA/V006Maple Lodge Sludge Treatment Facility | Operator: Form Number: | Thames Water Utilities Limited Air1 / 25/03/2024 |

### Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

| Emission  Point | Substance /  Parameter | Emission  Limit Value | Reference Period | Result [1] | Test  Method [2] | Sample  Date and Times [3] | Uncertainty  [4] |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CHP Engines | | | | | | | |
| A8a – 3.76 MWth CHP  [note 7] | Oxides of Nitrogen  (NO and NO2 expressed as NO2) | 500 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Sulphur dioxide | 350 mg/m3 | Average over sample period |  | BS EN 14791  or  CEN TS 17021  or  by calculation based on fuel sulphur |  |  |
| Sulphur dioxide | 162 mg/m3 [note 5] | Average over sample period |  |  |  |
| Carbon monoxide | 1400 mg/m3 | Average over sample period |  | BS EN 15058 |  |  |
| Total VOCs | No limit set | No Limit set |  | BS EN 12619 |  |  |
| A8b – 3.76 MWth CHP  [note 7] | Oxides of Nitrogen  (NO and NO2 expressed as NO2) | 500 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Sulphur dioxide | 350 mg/m3 | Average over sample period |  | BS EN 14791  or  CEN TS 17021  or  by calculation based on fuel sulphur |  |  |
| Sulphur dioxide | 162 mg/m3 [note 5] | Average over sample period |  |  |  |
| Carbon monoxide | 1400 mg/m3 | Average over sample period |  | BS EN 15058 |  |  |
| Total VOCs | No limit set | No Limit set |  | BS EN 12619 |  |  |
| Boilers | | | | | | | |
| A5a – 1.034 MWth Boiler 1 [burning biogas] | Oxides of Nitrogen  (NO and NO2 expressed as NO2) | 150 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Sulphur dioxide | 200 mg/m3 [note 5] | Average over sample period |  | BS EN 14791  or  CEN TS 17021  or  by calculation based on fuel sulphur |  |  |
| A5b – 1.034 MWth Boiler 1 [burning biogas] | Oxides of Nitrogen  (NO and NO2 expressed as NO2) | 150 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Sulphur dioxide | 200 mg/m3 [note 5] | Average over sample period |  | BS EN 14791  or  CEN TS 17021  or  by calculation based on fuel sulphur |  |  |
| A5c – 1.034 MWth Boiler 1 [burning biogas or gas oil] | Oxides of Nitrogen  (NO and NO2 expressed as NO2) | 150 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Sulphur dioxide | 200 mg/m3 [note 5] | Average over sample period |  | BS EN 14791  or  CEN TS 17021  or  by calculation based on fuel sulphur |  |  |
| A5d – 1.034 MWth Boiler 1 [burning biogas or gas oil] | Oxides of Nitrogen  (NO and NO2 expressed as NO2) | 150 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Sulphur dioxide | 200 mg/m3 [note 5] | Average over sample period |  | BS EN 14791  or  CEN TS 17021  or  by calculation based on fuel sulphur |  |  |
| Emergency Flare | | | | | | | |
| A9  [Note 6] | Oxides of nitrogen (NO and NO2 expressed as NO2) | 150 mg/m3 | Average over sample period |  | BS EN 14792 |  |  |
| Carbon monoxide | 50 mg/m3 | Average over sample period |  | BS EN 15058 |  |  |
| Total VOCs | 10 mg/m3 | Average over sample period |  | BS EN 12619:2013 |  |  |

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the ‘minimum – maximum’ measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[5] This emission limit applies from 1 January 2030, unless otherwise advised by the Environment Agency.

[6] Monitoring to be undertaken in the event the emergency flare has been operational for more than 10 per cent of a year (876 hours). Record of operating hours to be submitted annually to the Environment Agency

[7] These emission limits are based on normal operating conditions and load - temperature 0°C (273 K); pressure 101.3 kPa and oxygen 5% (for gas engines burning biogas) and oxygen 3% (for emergency flares and medium combustion plants other than engines and gas turbines burning biogas such as boilers).

Signed ……………………………………………………………. Date………………………..

(Authorised to sign as representative of Operator)

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| **Permit Number:**  **Facility:** | **EPR/FP3435LA/V006**  **Maple Lodge Sludge Treatment Facility** | **Operator:**  **Form Number:** | Thames Water Utilities Limited  **Sewer1 / 25/03/2024** |

**Reporting of emissions to sewer for the period from DD/MM/YYYY to DD/MM/YYYY**

1. **Reporting of emissions to sewer for the period from DD/MM/YYYY to DD/MM/YYYY**

| Emission  Point | Substance /  Parameter | Emission  Limit Value | Reference Period | Result [1] | Test  Method [2] | Sample  Date and Times [3] | Uncertainty  [4] |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S1 | Benzene, toluene, ethylbenzene, xylene (BTEX) | -- | Spot sample or flow-proportional composite sample |  | EN ISO 15680 |  |  |
| Hydrocarbon oil index (HOI) | 10 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 9377-2 |  |  |
| Free cyanide (CN-) | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 14403-1 or  EN ISO 14403-2 |  |  |
| Adsorbable organically bound halogens (AOX) | 1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 9562 |  |  |
| Arsenic | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | BS EN ISO 11885 or  BS EN ISO 17294-2 or  BS EN ISO 15586 |  |  |
| Cadmium | 0.1 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Chromium | 0.3 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Copper | 0.5 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Nickel | 1 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Lead | 0.3 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Zinc | 2 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Mercury | 10 µg/l | Spot sample or flow-proportional composite sample |  | EN ISO 17852 or  EN ISO 12846 |  |  |
| Manganese (Mn) | -- | Spot sample or flow-proportional composite sample |  | EN ISO 11885,  EN ISO 17294-2 or  EN ISO 15586 |  |  |
| Hexavalent chromium (Cr(VI)) | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 10304-3 or  EN ISO 23913 |  |  |
| PFOA and PFOS | -- | Spot sample or flow-proportional composite sample |  | -- |  |  |
| S2 | Benzene, toluene, ethylbenzene, xylene (BTEX) | -- | Spot sample or flow-proportional composite sample |  | EN ISO 15680 |  |  |
| Hydrocarbon oil index (HOI) | 10 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 9377-2 |  |  |
| Free cyanide (CN-) | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 14403-1 or  EN ISO 14403-2 |  |  |
| Adsorbable organically bound halogens (AOX) | 1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 9562 |  |  |
| Arsenic | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | BS EN ISO 11885 or  BS EN ISO 17294-2 or  BS EN ISO 15586 |  |  |
| Cadmium | 0.1 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Chromium | 0.3 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Copper | 0.5 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Nickel | 1 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Lead | 0.3 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Zinc | 2 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Mercury | 10 µg/l | Spot sample or flow-proportional composite sample |  | EN ISO 17852 or  EN ISO 12846 |  |  |
| Manganese (Mn) | -- | Spot sample or flow-proportional composite sample |  | EN ISO 11885,  EN ISO 17294-2 or  EN ISO 15586 |  |  |
| Hexavalent chromium (Cr(VI)) | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 10304-3 or  EN ISO 23913 |  |  |
| PFOA and PFOS | -- | Spot sample or flow-proportional composite sample |  | -- |  |  |
| S3 | Benzene, toluene, ethylbenzene, xylene (BTEX) | -- | Spot sample or flow-proportional composite sample |  | EN ISO 15680 |  |  |
| Hydrocarbon oil index (HOI) | 10 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 9377-2 |  |  |
| Free cyanide (CN-) | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 14403-1 or  EN ISO 14403-2 |  |  |
| Adsorbable organically bound halogens (AOX) | 1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 9562 |  |  |
| Arsenic | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | BS EN ISO 11885 or  BS EN ISO 17294-2 or  BS EN ISO 15586 |  |  |
| Cadmium | 0.1 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Chromium | 0.3 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Copper | 0.5 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Nickel | 1 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Lead | 0.3 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Zinc | 2 mg/l | Spot sample or flow-proportional composite sample |  |  |  |
| Mercury | 10 µg/l | Spot sample or flow-proportional composite sample |  | EN ISO 17852 or  EN ISO 12846 |  |  |
| Manganese (Mn) | -- | Spot sample or flow-proportional composite sample |  | EN ISO 11885,  EN ISO 17294-2 or  EN ISO 15586 |  |  |
| Hexavalent chromium (Cr(VI)) | 0.1 mg/l | Spot sample or flow-proportional composite sample |  | EN ISO 10304-3 or  EN ISO 23913 |  |  |
| PFOA and PFOS | -- | Spot sample or flow-proportional composite sample |  | -- |  |  |

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the ‘minimum – maximum’ measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ……………………………………………………………. Date………………………..

(Authorised to sign as representative of Operator)

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| Permit Number: Facility: | EPR/FP3435LA/V006 Maple Lodge Sludge Treatment Facility | Operator: Form Number: | Thames Water Utilities Limited WaterUsage1 / 25/03/2024 |

### Reporting of Water Usage for the year

| Water Source | Usage (m3/year) | Specific Usage (m3/unit output) |
| --- | --- | --- |
| Mains water |  |  |
| TOTAL WATER USAGE |  |  |

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| --- |
| Operator’s comments: |

Signed ……………………………………………………………. Date………………………..

(authorised to sign as representative of Operator)

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| Permit Number: Facility: | EPR/FP3435LA/V006Maple Lodge Sludge Treatment Facility | Operator: Form Number: | Thames Water Utilities Limited Energy1 / 25/03/2024 |

### Reporting of Energy Usage for the year

| Energy Source | Energy Usage | | Specific Usage (MWh/unit output) |
| --- | --- | --- | --- |
|  | Quantity | Primary Energy (MWh) |  |
| Electricity \* | MWh |  |  |
| Natural Gas | MWh |  |  |
| Gas Oil | tonnes |  |  |
| Recovered Fuel Oil | tonnes |  |  |
| Biogas | tonnes |  |  |
| TOTAL | - |  |  |

\* Conversion factor for delivered electricity to primary energy = 2.4

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| Operator’s comments: |

Signed ……………………………………………………………. Date………………………..

(Authorised to sign as representative of Operator)

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| Permit Number: Facility: | EPR/FP3435LA/V006Maple Lodge Sludge Treatment Facility | Operator: Form Number: | Thames Water Utilities Limited Performance1 / 25/03/2024 |

### Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY

| Parameter | Units |
| --- | --- |
| Total raw material used | tonnes |
| CHP engine usage | hours |
| CHP engine efficiency | % |
| Biogas usage | tonnes or m3 |
| Auxiliary boiler usage | hours |
| Emergency flare operation | hours |
| Electricity exported | MWh |

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| Operator’s comments: |

Signed ……………………………………………………………. Date………………………..

(Authorised to sign as representative of Operator)

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| **Permit Number:**  **Facility:** | **EPR/FP3435LA/V006**  **Maple Lodge Sludge Treatment Facility** | **Operator:**  **Form Number:** | Thames Water Utilities Limited  **Process1 / 25/03/2024** |

**Reporting of process monitoring for the period from DD/MM/YYYY to DD/MM/YYYY**

| Emission  Point | Substance /  Parameter | Trigger Value /Threshold Value /Industry Standard | Result /Reading [1] | Test Method [2] | Monitoring Date and Time |
| --- | --- | --- | --- | --- | --- |
| **Process monitoring of digestion stability** | | | | | |
| Digester feed | pH |  |  |  |  |
| Alkalinity |
| Temperature |
| Hydraulic loading rate |
| Organic loading rate |
| Volatile fatty acids concentration |
| Ammonia |
| Liquid/foam level |
| **Digestate (Other monitoring)** | | | | | |
| Digestate batch | Volatile fatty acids concentration |  |  |  |  |
| Ammonia |
| **Monitoring of biogas produced** | | | | | |
| Biogas in digester | Flow |  |  |  |  |
| Methane |  |  |  |  |
| CO2 |  |  |  |  |
| O2 |  |  |  |  |
| Hydrogen sulphide |  |  |  |  |
| Pressure |  |  |  |  |
| **Tank structural integrity** | | | | | |
| Digester and storage structural stability | Integrity checks |  |  |  |  |
| **Digester tanks (Other monitoring)** | | | | | |
| Digester tank | Agitation /mixing |  |  |  |  |
| Tank capacity and sediment assessment |
| **Site odour monitoring** | | | | | |
| Waste reception building or area; Digester(s) and storage tank(s) | Odour olfactory monitoring |  |  |  |  |
| **Monitoring of diffuse emissions** | | | | | |
| Diffuse emissions from all sources identified in the Leak Detection and Repair (LDAR) programme | VOCs including methane |  |  |  |  |
| **Monitoring of CHP engine stack(s)** | | | | | |
| CHP engine 1 | VOCs including methane |  |  |  |  |
| Exhaust gas temperature |  |  |  |  |
| Exhaust gas pressure |  |  |  |  |
| Exhaust gas water vapour content |  |  |  |  |
| Exhaust gas oxygen |  |  |  |  |
| Exhaust gas flow |  |  |  |  |
| Total annual VOCs emissions (calculated) |  |  |  |  |
| CHP engine 2 | VOCs including methane |  |  |  |  |
| Exhaust gas temperature |  |  |  |  |
| Exhaust gas pressure |  |  |  |  |
| Exhaust gas water vapour content |  |  |  |  |
| Exhaust gas oxygen |  |  |  |  |
| Exhaust gas flow |  |  |  |  |
| Total annual VOCs emissions (calculated) |  |  |  |  |
| **Meteorological conditions** | | | | | |
| Wind speed |  |  |  |  |  |
| Wind direction |  |  |  |  |  |
| Air temperature |  |  |  |  |  |
| **Emergency flare operation** | | | | | |
| Date of operation |  |  |  |  |  |
| Time of operation |  |  |  |  |  |
| Duration of operation |  |  |  |  |  |
| Annual operational hours |  |  |  |  |  |
| **Pressure relief valve operation** | | | | | |
| Date of release | Biogas release |  |  |  |  |
| Time of release |  |  |  |  |
| Duration of release |  |  |  |  |
| Annual mass release |  |  |  |  |
| **Storage tank volume (for digestate and leachate storage)** | | | | | |
| Daily volume check | Volume |  |  |  |  |
| **Storage tank volume (Digesters /Feedstock tanks / Other tanks)** | | | | | |
| Daily volume check | Volume |  |  |  |  |

1. Monitoring results can be submitted to the Environment Agency in an electronic format or in other format as agreed in writing by the Environment Agency.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

Signed ……………………………………………………………. Date………………………..

(Authorised to sign as representative of Operator)