



Environmental Site Management Plan

Accident Prevention and Management Plan: Aylesbury STW



Using this standard

This standard is controlled and managed by EMS & Air and Waste Permitting Teams, and a copy is held on SharePoint at the following location: [Environmental Management Systems](#)

If you have any feedback please send this to: airandwaste.permitting@thameswater.co.uk

This standard works in combination with other corporate documents including the Asset Standards, Site Operating Manuals, site Odour Management Plans, Health and Safety Standards, and regulatory permits.

Document Control & Procedures

0 Contents

| | |
|--|-----------|
| Document Control & Procedures | 2 |
| 0 Contents..... | 2 |
| 0 Document Confidentiality..... | 3 |
| 1 Glossary of Terms..... | 3 |
| 2 Executive Summary | 4 |
| 3 Process Responsibility..... | 4 |
| 4 Accident Prevention | 4 |
| 4.1 Spill Prevention | 5 |
| 4.2 Off Site Receptors | 5 |
| 4.3 Stored Substances..... | 6 |
| 5 Assessment | 7 |
| 6 Reporting and Recording | 21 |
| 6.1 Reporting | 21 |
| 6.2 Recording | 21 |
| Appendix A | 23 |
| Site Specific Key Contacts..... | 23 |
| Appendix B | 24 |
| Notification Forms | 24 |

Figures and Tables:

No table of figures entries found.

Document Confidentiality

This document and its associated sections will only be disclosed to those of the recipient's employees and contractors who have a need to see it as part of their duties.

This document must be destroyed when the recipient has no further use for it or when otherwise requested to do so by Thames Water Utilities Limited (TWUL).

Title and copyright in the document vest in TWUL.

Reproduction of the whole or part of the document(s) shall not be made without the express permission of TWUL.

Title and copyright is vested in Thames Water. This is a controlled document.

Copying is permitted, provided any copy made is clearly marked as 'Uncontrolled Copy'.

1 Glossary of Terms

| TERM | DESCRIPTION |
|-----------|---|
| AD | Anaerobic Digestion |
| CHP | Combined Heat and Power |
| DEFRA | Department for Environment, Food and Rural Affairs |
| EA | Environment Agency |
| EMS | Environmental Management System |
| EPR | Environmental Permitting Regulations |
| FFT | Flow to Full Treatment |
| ICA | Instrumentation Control & Automation |
| IED | Industrial Emissions Directive |
| LNR | Local Nature Reserve |
| LWS | Local Wildlife Site |
| MPA | Marine Protection Area |
| NNR | National Nature Reserve |
| OCU | Odour Control Unit |
| OMC | Operational Management Centre |
| OMP | Odour Management Plan |
| PFT | Picket Fence Thickener |
| PM | Process Manager |
| PS | Pumping Station |
| PST | Primary Settlement Tank |
| Receptors | Sensitive receptors are any fixed buildings or installations where odour annoyance may occur, such as residential homes, schools, hospital, offices, shops or garden centres. Open areas such as playgrounds and public footpaths should also be listed where these are known to have been affected by odour. |
| SAP | Thames Water's enterprise resource and planning system |
| SAC | Special Area of Conservation |
| SCADA | Supervisory Control and Data Acquisition |
| SOM | Site Operating Manual |
| SPA | Special Protection Area |
| SSSI | Site of Special Scientific Interest |
| STW | Sewage Treatment Works |
| TW | Thames Water |
| UWWTD | Urban Waste Water Treatment Directive |

2 Executive Summary

In accordance with the consolidated IED Environmental Permit for Aylesbury; Waste BAT, specifically BAT1; and associated written management systems, this is the site management plan covering accident prevention and management. Thames Water Utilities Ltd is required to review this plan at least every 4 years, unless there are incidents, operational or managerial changes at the site which would require an earlier review.

The prime function of the sludge treatment facility at Aylesbury Sewage Treatment Centre is to capture the energy potential from the treatment of sewage sludges. The plant is run 24/7 due to the continuous supply of sewage received at the treatment works either from the surrounding catchment, or via tanker discharge.

This document forms part of the Thames Water Environmental Management System (EMS) for the permitted Sludge Treatment Centre (STC) within Aylesbury Sewage Treatment Works.

Thames Water is committed to continual environmental improvements, including minimising the risk of accidents both on the site and its operations and in the wider environmental setting. This commitment is delivered through efficient control of processes, capital investments, and environmental training.

This site management plan for accident prevention and management follows relevant guidance produced by the Environment Agency¹ and includes the following sections:

- This plan provides a list of off-site receptors (refer to Section 4.2);
- This plan provides details of the potentially polluting substances located at the site (refer to Section 4.3);
- This plan identifies potential accidents and states the likelihood and consequence of each accident (refer to Section 5);
- This plan states the measures taken to avoid accidents and measures taken to minimise the impacts of accidents on the environment (refer to Section 5);
- This plan outlines the reporting, recording and review steps to be taken should a potentially polluting incident occur (refer to Section 6); and,
- This plan includes reporting forms that should be used in the event of incident occurring (refer to Appendix B).

3 Process Responsibility

The Operational Manager for the site has overall responsibility for reviewing the processes on the site to minimise the risk of accidents and reduce the impact of any such accidents that occur. This document is reviewed 4-yearly, but the review process is ongoing as part of the regular performance monitoring for the site. This plan was prepared in November 2023 and is next scheduled for review in November 2027.

4 Accident Prevention

In accordance with Thames Water's health and safety obligations and commitments, the STC is to be operated in a manner designed to reduce the risk of accidents to staff, the site and the wider environment.

¹ Guidance 'Develop a management system: environmental permits' published 1st February 2016, last updated 4th August 2021.

As part of the design process for any new plant or equipment on site, a HAZOP review is undertaken to ensure that the risk of accidents and their impacts is reduced through design. The site has been assessed under DSEAR and appropriate zoning applied, with clear signage indicating the zones.

Regular maintenance of the installation, is carried out in accordance with the sites preventative maintenance programme, and the SOM. This ensures that the failures of plant are minimised over time and early remedial action implemented for any identified faults noted during maintenance.

4.1 Spill Prevention

The site is equipped with a number of spill kits and drain covers, located close to chemical and oil storage areas and tanks. Staff are trained in the use of these items to minimise the impact of spillages and risks to the works of chemicals or oils entering the site drainage system.

4.2 Off Site Receptors

The site is located approximately 3 km to the west of the town of Aylesbury, within a commercial and industrial estate. A number of residential properties can be found near to the site entrance, sharing the site access road off the Rabans Lane Industrial Area, to the east. This industrial estate includes a number of light industrial units and warehouses close to the site perimeter. A local council Household Waste and Recycling Centre (HWRC) is located on the site's north-eastern perimeter while a railway line runs along the northern perimeter. Beyond the railway line is a large residential housing estate.

The Bear Brook (a designated Main River) runs at a distance of approximately 60m parallel with the south-western boundary of the site and an un-named drain runs along the south-western boundary of the site and flows in a north-westerly direction. Both watercourses outfall into the River Thames (a designated Main River) which is located on the site's western perimeter.

The majority of the STW and area of the STC to be permitted sits within Flood Zone 1 with a very low probability of flooding (>1:1000 annual probability), although the area of the Secondary Digester Tanks on the west of the permitted area are within Flood Zone 2, with between a 1:100 and 1:1000 annual probability of flooding.

The site sits outside the boundaries of a Source Protection Zone (SPZ) and is not within an Air Quality Management Area (AQMA).

For designated habitat sites, the relevant distances for consideration are: International designations (Special Area of Conservation (SAC), Marine Protection Area (MPA), Special Protection Area (SPA) and Ramsar - 10km); National designations (Site of Special Scientific Interest (SSSI) – 2km); Local Nature Reserve (LNR) and National Nature Reserve (NNR), Local Wildlife Sites (LWS) and Ancient Woodland (2km).

There are two designated statutory habitat sites within the relevant distances of the site. Stone SSSI is located approximately 2 km to the south-west of the site and the Chilterns Beechwood SAC is located approximately 9 km to the south-east of the site. There is one non-statutory designated LWS within 2 km of the site, namely the Aylesbury Sewage Works LWS and is located adjacent to the north and west of the site. There are no SPAs, MPAs or Ramsar sites located within 10 km of the site and no LNRs or NNRs or Ancient Woodland sites located within 2 km of this site.

There are no protected habitat or species records within the specified screening distance of the site.

Designated site review

| Site Name | Designation | Direction from site | Distance from site |
|-------------------------------------|----------------------|---------------------|-----------------------|
| Stone | SSSI | South-west | 2,000 m |
| Chilterns Beechwood | SAC | South-east | 9,000 m |
| n/a | Ramsar | n/a | n/a |
| n/a | SPA | n/a | n/a |
| n/a | MPA | n/a | n/a |
| n/a | NNR | n/a | n/a |
| n/a | Local Nature Reserve | n/a | n/a |
| n/a | Ancient Woodland | n/a | n/a |
| List of Local Wildlife Sites | | | |
| Aylesbury Sewage Works | | | All sites <2,000 m |

4.3 Stored Substances

Site tank inventory

| Tank Purpose | No. | Operational Volume (m ³) | Total Volume (m ³) | Material |
|-----------------------------|-----|--------------------------------------|--------------------------------|----------|
| Sludge Blending Tanks | 2 | 549 | 1,098 | Concrete |
| Digester Feed Tank | 1 | 154 | 154 | Steel |
| Primary Digester Tank | 1 | 2,095 | 2,095 | Steel |
| Primary Digester Tank | 1 | 1,980 | 1,980 | Steel |
| Secondary Digester Tanks | 5 | 1,436 | 7,180 | Steel |
| Digested Sludge Buffer Tank | 1 | 1,436 | 1,436 | Steel |
| Sludge Import Tank | 1 | 33 | 33 | Steel |

5 Assessment

Risk Matrix and Terminology for Accident for Risk Assessment

| Likelihood ↓ | Consequence | | |
|--------------|-------------|--------|--------|
| | Low | Medium | High |
| Low | Low | Low | Medium |
| Medium | Low | Medium | High |
| High | Medium | High | High |

Classification of Likelihood

| Classification | Definition |
|----------------|---|
| Low | Probability of an event is low and likely only to occur in the long-term (a yearly basis or less frequent). |
| Medium | It is probable that an event will occur periodically in the medium-term (twice yearly basis). |
| High | An event is very likely to occur in the short-term (monthly or weekly basis) and is almost inevitable over the long-term OR there is evidence at the receptor of harm or pollution. |

Classification of Consequences

| Classification | Definition |
|----------------|--|
| Low | Impact is low or a minor, short-term nuisance. Minor release to a non-sensitive receptor or pollution of water course. Non-permanent health effects to human health (easily prevented by appropriate use of PPE). Minor surface damage to a building, structure, service or the environment which can be repaired immediately. |
| Medium | Impact is noticeable in the short to medium-term. Large release impacting on the receiving media which kills flora and fauna and requires remediation. Nuisance causing non-permanent health effects to human health. Damage to buildings, structures and services which prevents use in the short-term and/or requires a specialist repair. |
| High | Impact is significant, wide-ranging and long-lasting effect. Has either a chronic or acute impact on human health. Very large release that has a major impact on flora and fauna which may be very difficult to remediate. Significant damage to a single or multiple building, structure and service which prevents use over a long-term and may require complete replacement. May cause a long-term impact or contribute towards a global issue due to |

| Classification | Definition |
|----------------|-------------------------------|
| | releases of greenhouse gases. |

The following categorisation of risk has been developed and the terminology adopted as follows:

| Term | Definition |
|---------------|--|
| Low | A level of harm is possible although this may not be noticeable to a receptor and would be a short-term event without lasting effects. Level of harm can be reduced using industry best practice and appropriate management techniques. |
| Medium | A level of harm may arise to a receptor which is noticeable although not long-lasting and may require some remedial actions in order to prevent re-occurrences. |
| High | A level of harm is likely to arise to a receptor that is severe causing significant harm to human health or the environment without appropriate remedial and mitigation measures being implemented. Remedial works to infrastructure and processes is required in the long-term. |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|---|------------|-------------|--------|---|---------------|
| <p>Major fire and/or explosion causing the release of polluting materials to air, water or land.</p> | <p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population</p> <p>Emissions to ground and ground water of digestate contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p> | Low | High | Medium | <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Management systems requires DSEAR assessment which is adhered to by site operations.</p> <p>Designated ATEX zones on site. Fire alarm systems installed and maintained.</p> <p>Biogas contained within a closed system and monitored for safety including a LDAR plan. Automatic cut off valve to biogas supply to stop biogas flows, electric temperature sensor, pressure monitors, flame arrestors, etc.</p> <p>Warning signs clearly displayed, and staff wear biogas alarms to alert to the presence of biogas. All visitors subject to site inductions and accompanied. Permit-to-work system in place.</p> <p>Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively.</p> <p>Smoking only permitted in designated areas of site.</p> | Low |
| <p>Minor fire causing the release of polluting materials to air, water or land</p> | <p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population</p> | Low | Medium | Low | <p>Follow site Incident Response Plan and inform relevant authorities.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|---|------------|-------------|------|---|---------------|
| | <p>Emissions to ground and ground water of digestate contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p> | | | | <p>Management systems requires DSEAR assessment which is adhered to by site operations including a LDAR plan.</p> <p>Designated ATEX zones on site. Fire alarm systems installed and maintained.</p> <p>Biogas contained within a closed system and monitored for safety. Automatic cut off valve to biogas supply to stop biogas flows, electric temperature sensor, pressure monitors, flame arrestors, etc.</p> <p>Warning signs clearly displayed, and staff wear gas alarms to alert to the presence of biogas. All visitors subject to site inductions and accompanied. Permit-to-work system in place.</p> <p>Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively.</p> <p>Smoking only permitted in designated areas of site.</p> | |
| <p>Failure to contain firefighting water</p> | <p>Emissions to ground and ground water of contaminated firefighting water entering soil and/or groundwater. Run-off from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> | Low | Medium | Low | <p>Likelihood of firefighting water being generated is low as the risk of fire is low.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|--|------------|-------------|--------|--|---------------|
| | Chronic effect on water quality | | | | <p>Site drainage returns to the UWWTD process providing containment and treatment process for fire water.</p> <p>Arrange for off-site tankering of firefighting water, if required.</p> | |
| Accidental explosion of biogas | <p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p> <p>Pollution of water or land</p> | Low | High | Medium | <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Management systems requires DSEAR assessment which is adhered to by site operations.</p> <p>Designated ATEX zones on site. Fire alarm systems installed and maintained.</p> <p>Biogas contained within a closed system and monitored for safety. Automatic cut off valve to biogas supply to stop biogas flows, electric temperature sensor, pressure monitors, flame arrestors, etc. Lightning protection system installed.</p> <p>Likelihood reduced by availability of multiple on-site uses of biogas (CHP engine, boilers and emergency flares) and use of pressure release valves as a safety measure.</p> | Low |
| Significant leak of biogas to atmosphere | Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory | Low | High | Medium | Site assets are protected by physical means to prevent vehicle strike and exposed pipework is guarded. | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|--|--|------------|-------------|--------|--|---------------|
| | <p>irritation, illness and nuisance to local population.</p> <p>Global warming potential of greenhouse gases.</p> | | | | <p>Regular proactive and preventative maintenance including a LDAR plan and regular visual checks.</p> <p>Pressure relief valves are present to avoid over-pressurisation of biogas system. Biogas detection system will raise the alarm should a leak of biogas be detected.</p> | |
| <p>Leaks of emission to air, but principally NOx.</p> | <p>Emissions to air and dispersion leading to harm to protected nature conservation sites – SSSIs, SAC and SPA.</p> <p>Harm to protected site through toxic contamination, nutrient enrichment, disturbance etc.</p> | Medium | Medium | Medium | <p>The site is not located within or adjacent to the boundaries of an AQMA.</p> <p>There is one SAC within 10 km of the site, namely the Chilterns Beechwoods SAC, which is located approx. 9 km to the south-east of the site. There is one SSSI within 2 km of the site, namely the Stone SSSI, which is located approx. 2 km to the south-west of the site. There is one LWS within 2k m of the site, namely the Aylesbury Sewage Works LWS situated adjacent to the north and west of the site. There are no SPAs, MPAs or Ramsar sites within 10 km of site. There are no NNRs, LNRs or Ancient Woodland sites within 2 km of the site.</p> <p>Emissions modelling submitted shows that the assessed CHP engine and boilers are acceptable from an air quality perspective.</p> <p>Site operations will be subject to emission limits under current Regulations with infrastructure designed to minimise uncontrolled releases. Checks, monitoring and preventative maintenance will further minimise fugitive emissions.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|--|------------|-------------|------|---|---------------|
| <p>Spillage of sludges or liquid during tanker transfer operations e.g. pipework leaks</p> | <p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality</p> | Low | Low | Low | <p>Transfer operations of waste materials is largely an automatic process controlled by the Process Controllers and parameters set within the SCADA system.</p> <p>All pipework is standardised, including tanker couplings. Tanker offloading areas (digesters and inlet) are concrete with kerbing to prevent release to ground.</p> <p>In event of a spillage, follow site spillage response plan and inform relevant site personnel and relevant authorities.</p> <p>Spill kits are provided around the site which can be used to contain a spillage and direct it towards site drainage. Site drainage returns to the STW providing treatment process for sludge or arrange off-site tankering of waste to another site. Sludge is relatively viscous and not highly mobile.</p> | Low |
| <p>Spillage of raw materials during (e.g. diesel, polymer) during use, transfer and disposal operations.</p> | <p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality</p> | Low | Medium | Low | <p>Raw materials are stored on made ground, within bunded containers or on bunds to contain spillages of 110% of the volume. Regular inspections for leaks and damage, with remedial action as required. Contents of bunds are regularly checked during environmental audits and after periods of heavy rainfall and emptied as required.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|--|--|------------|-------------|------|--|---------------|
| | | | | | <p>In event of a spillage, follow site spillage response plan and inform relevant site personnel. COSHH data sheets available.</p> <p>Deliveries to site are made by approved suppliers. Use of raw materials is carried out by trained personnel or automatically controlled processes.</p> <p>In the event of a minor spillage, spill kits are provided around the site which can be used to contain a spillage and direct it towards site drainage if suitable.</p> <p>Site drainage returns to the STW providing treatment process for suitable materials or arrange off-site tankering of waste, if required.</p> | |
| <p>Spillage of sludges (e.g. primary sludge, digested sludge) during processing and transfer operations e.g. tank overtopping, pipework leaks</p> | <p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality</p> | Low | Medium | Low | <p>Processing and transfer operations of waste materials is largely an automatic process controlled by the Process Controllers and parameters set within the SCADA system.</p> <p>Storage tanks are mostly uncovered, but primary digesters are covered with fixed roofs. However, tanks are fitted with sensors to monitor levels within a tank and can inhibit additional pumping if high alarms activate to reduce the likelihood of overtopping.</p> <p>Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively and minimise the risk of spillages.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|--|---|------------|-------------|--------|---|---------------|
| | | | | | <p>In event of a spillage, follow site spillage response plan and inform relevant site personnel and relevant authorities.</p> <p>Spill kits are provided around the site which can be used to contain a spillage and direct it towards site drainage.</p> <p>Site drainage returns to works inlet providing treatment process for sludge or arrange off-site tankering of waste to another site. Sludge is relatively viscous and not highly mobile.</p> | |
| <p>Failure of sludge storage tanks / digester tanks</p> | <p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality.</p> | Low | High | Medium | <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Regular infrastructure inspections for tanks and pipework and planned preventive maintenance system in place. Regular visual inspections for tanks and pipework and reactive maintenance.</p> <p>In-line flow monitoring in key locations and tank level monitoring would identify losses and enable a quick response.</p> <p>Some tanks are found on made ground, but gravel and grass infill can be found between tanks, e.g. between the digesters, between secondary digesters. Made ground is connected to site drainage which returns to works inlet.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|---|------------|-------------|--------|---|---------------|
| | | | | | Sludge is relatively viscous and not highly mobile limiting the distance it can spread in a short time period. | |
| Acceptance of nonconforming wastes and wastes that are incompatible with the waste treatment process | <p>Impacts on the normal performance of site treatment processes leading to emissions to ground and ground water contaminating soil and/or groundwater.</p> <p>Harm to aquatic flora and fauna and chronic effect on water quality. Harm to aquatic flora and fauna</p> | Low | Medium | Low | <p>Waste materials subject to waste pre-acceptance checks prior to delivery to site and subject to waste acceptance checks prior to discharge.</p> <p>Site has physical security measures to prevent unauthorised access to the site and all discharge points.</p> <p>Waste can only be accepted at the site if it is suitable for the biological treatment process.</p> <p>Site processes are monitored automatically with alarms to alert staff in the event of abnormal situations.</p> <p>Staff conduct regular monitoring of all plant and equipment during routine site activities.</p> | Low |
| All on-site hazards: machinery | <p>Direct physical contact with human population and /or livestock after gaining unauthorised access to the installation</p> <p>Bodily injury</p> | Low | High | Medium | <p>Direct physical contact is minimised by activity being carried out within enclosed digesters</p> <p>Site activities are managed and operated in accordance with a management system. Site physical security measures including a perimeter fence and access-controlled entrance gates to prevent unauthorised access.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|---|------------|-------------|--------|--|---------------|
| | | | | | <p>Assets are protected by various physical means including fencing, kerbing and bollards to prevent vehicle strikes.</p> <p>Site has a one-way traffic management system to minimise the need to reverse. Use of banksmen as appropriate.</p> <p>Vehicles equipped with reversing alarms.</p> | |
| Vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | <p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population</p> <p>Emissions to ground and ground water of digestate contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p> | Low | High | Medium | <p>Unauthorised access is unlikely to happen and minimised by physical site security measures and effective management systems.</p> <p>Site has access controlled barrier entry for all vehicular access. Fence runs the perimeter of the site.</p> <p>Additional security fences around some assets and other assets are kept within locked containers or buildings. Warning signs are displayed.</p> | Low |
| Flooding from rivers, streams and groundwater | Emissions to surface water course and harm to aquatic flora and fauna. Infiltration to ground and groundwater. Harm to | Low | Medium | Low | The STC is largely located within Flood Zone 1 meaning there is a low probability of river flooding, although secondary digesters are within a Flood Zone 2 indicating a higher likelihood of flooding in this area. The wider STW is mostly located within | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|---|---|------------|-------------|------|--|---------------|
| | aquatic flora and fauna and chronic effect on water quality. | | | | <p>Flood Zone 1 although areas of the UWWTD process are located within Flood Zone 3 but this is unlikely to impact on sludge digestion.</p> <p>General wider works designed to minimise risk of localised works flooding due to storm surges.</p> <p>Potentially polluting substances stored within suitable containers and provided with bunds to contain spillages.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Take appropriate corrective and preventative actions to minimise environmental impact.</p> | |
| Flooding due to drain blockages and/or excessive rainfall causing localised on-site surface water flooding | Emissions to surface water course and harm to aquatic flora and fauna. Infiltration to ground and groundwater. Harm to aquatic flora and fauna and chronic effect on water quality. | Medium | Low | Low | <p>Site wide drainage system linked to main sewage works, which includes additional capacity in storm tanks within the works to manage additional flows.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Take appropriate corrective and preventative actions to minimise environmental impact</p> | Low |
| Loss of mains power leading to failure of pumps / control systems and | Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water | Low | Medium | Low | Site CHP engine is able to supply electricity to the site using biogas supplies on site. Emergency generators for the whole site provide back-up power / contingency plans to provide power to critical operations in the event of an electrical outage. | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|--|--|------------|-------------|------|--|---------------|
| possible leaks and escape of sludge. | courses. Harm to aquatic flora and fauna. | | | | <p>Failsafe systems in place to ensure sludge remains in situ in the event of a loss of power and that systems are promptly returned into operation.</p> <p>Site wide drainage system linked to main sewage works in the event of a spillage.</p> | |
| Vandalism | Damage to plant or equipment on site due to unauthorized access to the site. | Low | Medium | Low | <p>Site accessed restricted at all times, including electronically controlled gates and 2 metre fencing. CCTV present at site.</p> <p>During normal operating hours, there is a culture of challenge around non-staff on site</p> | Low |
| Extreme weather conditions leading to abnormal conditions / release of potentially polluting substances | <p>Emissions to air and dispersion leading to inhalation by local human receptors and impacts on local ecological receptors. Respiratory irritation, illness and nuisance to local population. Harm to flora and fauna.</p> <p>Emissions to ground and ground water contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality.</p> | Low | Medium | Low | <p>The treatment process can be controlled from off-site locations in the event of the site being inaccessible due to extreme weather e.g. snow, flooding.</p> <p>Storage tanks for potentially polluting substances have been designed to relevant industry standards at the time of construction.</p> <p>Lightning protection is installed at relevant locations to protect assets from lightning strike.</p> <p>Potentially polluting substance are stored in accordance with MSDS requirements and away from sensitive receptors.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> | Low |

| Activity/Hazard | Environmental Impact (Pathway-Receptor) | Likelihood | Consequence | Risk | Risk Management | Residual Risk |
|-----------------|--|------------|-------------|------|--|---------------|
| | | | | | Take appropriate corrective and preventative actions to minimise environmental impact. | |

6 Reporting and Recording

6.1 Reporting

If an incident with potentially significant environmental consequences occurs, TWUL will notify the Environment Agency without delay. TWUL will also inform the Environment Agency should any complaints be received directly to the site as a result of the incident and will advise what remedial measures or actions have been taken to address the issue. Copies of material complaints received will be made available to the Environment Agency for review on request.

Details of the information that should be reported to the Environment Agency are found in the most recent variation of the site's Environmental Permit but is reproduced as Appendix B of this document.

6.2 Recording

The procedure employed by TWUL for recording, investigating and responding to incidents or breaches of the permit is the EPR notification procedure. Notifications must be made to the Environment Agency without delay and within 24 hours of the detection of an accident that has caused, is causing or may cause significant pollution or a breach of a limit specified in the site's Environmental Permit.

In the event of an accident, a Schedule 5 notification is completed following an incident with potentially significant environmental consequences. Relevant information that must be recorded includes:

- Date, time and location of the event;
- Substances involved, including estimated quantities; and,
- Immediate measures taken to minimise environmental impacts.

A copy of the Schedule 5 notification form is provided in Appendix B. Part A must be completed within 24 hours of detection of the incident and Part B is completed as soon as practicable.

Records will be made of all incidents with potentially significant environmental consequences that occur at the installation. The associated actions arising will be held on SharePoint. All records of events with potentially significant environmental consequences and the associated actions arising will be retained as required by the Environmental Permit. Where an incident with potentially significant environmental effects occurs, and the nature of the incident supports further investigation, a post incident review may be required.

6.3 Post-incident Review

Following an incident where potentially significant environmental effects occur, and the nature of the incident warrants it, an investigation will take place to determine both the root cause of the incident and how to prevent the incident reoccurring. The findings of the investigation will be reported to TWUL's management and shared with all relevant employees to enable the incorporation of good practice into future works.

A formal 'event learning' review of all on site processes and procedures will be undertaken by TWUL following any incident with potentially significant environmental consequences, if the processes are determined to be contributory to the cause of the incident. Any changes to processes or procedures required as a result of the formal review will be communicated to TWUL management and employees.

If, as a result of the incident, this Accident Management Plan is subject to revision, it should be updated as part of this post-incident review and communicated to relevant TWUL management and employees.

All safety equipment used to respond to an incident should be checked and replenished as required.

6.4 Contacts

The key emergency contacts in the event of an accident or incident are:

| Contact | Number |
|---|---|
| Thames Water Utilities Limited Customer Services | 08459 200800 |
| Environment Agency | 0800 807060 (incident number) 03708 506506 (normal number) |
| Emergency services | 999 |

Appendix A

Site Specific Key Contacts

| Role | Name | Email address | Phone Number |
|---|------|---------------|--------------|
| Area Operations Manager | | | |
| Site Performance Manager | | | |
| Technically Competent Manager | | | |
| Customer Centre | | | |
| Thames Water Environmental Compliance Manager | | | |
| Thames Water Health and Safety Manager | | | |

Appendix B

Notification Forms

To be inserted from relevant permit document.