# ABP Kingswinford

| | |
|---|---|
| **Document Title:** | Environmental Risk Assessment – Hot Water Boiler & WWTP |
| **Revision:** | Issue 1.0 |
| **Date:** | 14/04/2023 |
| **Prepared For:** | ABP Kingswinford |

# 1.0 INTRODUCTION

This Environmental Risk Assessment has been produced to support the installation of a 450kwh hot water boiler and WWTP at ABP Kingswinford. The two installations will assist in improving the wastewater on site before sent to sewer and improving the overall energy efficiency of ABP Kingswinford.

This document provides an environmental risk assessment for the proposed project. The document has been produced in conjunction with the following documents:

| **WWTP** | |
|---|---|
| 2.1 SOP Preventative Maintenance of Site Equipment | 2.4 SOP Operation of WWTP |
| 2.5 SOP Malfunction of any Continuous Monitor | 2.6 SOP Responding to Activated Alarms on Site |
| 2.10 SOP Monitoring WWTP | |

| **Air Emissions** | |
|---|---|
| 10.1 SOP for Noise Monitoring | 10.2 SOP fir the Annual Testing of the Boilers |
| 10.4 SOP for the Control of Air Emissions | |

## 1.1 Reason for Application

ABP Kingswinford proposes to remove 7 emissions to air source points and install a 450kwh hot water boiler. This will ensure the overall energy efficiency for ABP Kingswinford processing of meat. Furthermore, the installation of a WWTP will treat the wastewater generated within ABP Kingswinford before discharged into the current sewer system.

## 1.2 Assessment Process

The Guidance "*Risk assessments for your environmental permit"* produced by the Environment Agency and DEFRA outlines a five-step process for assessing the site activity and the risk to local amenity to successfully produce an Environmental Risk Assessment:

- Identify and consider risks for your site, and the sources of the risks.
- Identify the receptors (people, animals, property, and anything else that could be affected by the hazard) at risk from your site.
- Identify the possible pathways from the sources of the risks to the receptors.

- Assess risks relevant to your specific activity and check they're acceptable and can be screened out.
- State what you'll do to control risks if they're too high.

This risk assessment will identify the potential human and environmental impacts that could result from the activity of a hot water boiler and WWTP. Risk assessments will be carried out for the following hazards:

| **Hot Water Boiler Hazards** | |
|---|---|
| 1. Damage | 2. Fugitive Emissions |
| 3. Visible Plumes | 4. Noise |
| 5. Fuel | |

| **WWTP Hazards** | |
|---|---|
| 1. Noise | 2. Visual |
| 3. Odour | 4. Waste Storage |
| 5. Discharge to Sewer | 6. Damage to WWTP |

# 2.0 ENVIRONMENTAL RISK MANAGEMENT

## 2.1 Hot Water Boiler

P = Possibility C = Consequence M = Magnitude

| Pollutant Model | | | Judgement | | | | Action | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Pathway** | **Receptor** | **P** | **C** | **M** | **Justification of Magnitude** | **Risk Management** | **Residual Risk** |
| Damage to boiler causing leaks and possibly explosion | Spillage | Local Residents, Employees | Low | Low | Low | Low – Boiler maintenance and continuous monitoring of performance by maintenance staff and planned maintenance programme. | Boiler will be operated according to its design specifications. For boiler operation and maintenance, it is recommended to refer to boiler plant documentation. only to be used by a qualified, competent, and trained individual.<br><br>Boiler controls, alarms, and pressure-relief valves are installed. Routine testing as directed by the manufacturer. | Low |
| Emissions – Air pollutants | Aerial dispersion | Local sensitive receptors | Low | Low | Low | Low – Boiler has measures in place to limit release of NOx, CO, SOx, and PM.<br><br>Incomplete combustion causes risk of elevated emissions e.g. | Detailed air quality modelling has been undertaken as part of this permit application. The results indicate the baseline air quality around the proposed installation is within European Limit Values and UK objectives.<br><br>Appropriate stack height to allow for dispersion.<br><br>The boiler and stack shall be associated with written maintenance schedule and in accordance with SOP's. | Low |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | during start-up and shut down. | The boilers shall be serviced at the frequencies agreed in the maintenance contract by a trained service engineer.<br><br>Staff operating and maintaining the boiler shall receive appropriate training and instructions from the boiler manufacturer. Staff shall be aware of how to identify and mitigate elevated or abnormal pollution emissions.<br><br>The boiler stack height shall be sufficient to prevent emissions influencing ground-level air pollution concentrations. | |
| Emissions from Boiler – $NO_x$ | Aerial dispersion | Staff and local residents | Low | Low | Low | Low – Boiler has a stack for effective $NO_x$ dispersion. | Regular servicing of the boilers by a trained competent operative as per the manufacturer's instructions.<br><br>Optimum temperature and oxygen conditions to ensure complete combustion | Low |
| Emissions from boiler – $SO_x$ | Aerial dispersion | Staff and local residents | Low | Low | Low | Low – Boiler has a stack for effective SOx dispersion. | Regular servicing of the boiler by a trained operative as per the manufacturer's instructions.<br><br>Optimum temperature and oxygen conditions to ensure complete combustion | Low |
| Emissions from boiler – CO | Aerial dispersion | Staff and local residents | Low | Low | Low | Low – Boiler has a stack for effective CO dispersion | Regular servicing of the boiler by a trained operative as per the manufacturer's instructions. | Low |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Optimum temperature and oxygen conditions to ensure complete combustion | |
| Emissions from boiler – PM | Aerial dispersion | Staff and local residents | Low | Low | Low | Low – Boiler has a stack for effective PM dispersion | Regular servicing of the boiler by a trained operative as per the manufacturer's instructions.<br><br>Optimum temperature and oxygen conditions to ensure complete combustion | Low |
| Noise from boiler | Aerial dispersion | Staff and local residents | Low | Low | Low | Low – Equipment generates very low level of noise | Regular maintenance of plant and machinery | Low |
| Fuel stored on site | Spillage | Local Environment | Low | Low | Low | Low – Leakage or spillages of fuel stored on site. | Fuel tank is self-bunded | Low |

## 2.2 WWTP

P = Possibility C = Consequence M = Magnitude

| Pollutant Model | | | Judgement | | | | Action | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Pathway** | **Receptor** | **P** | **C** | **M** | **Justification of Magnitude** | **Risk Management** | **Residual Risk** |
| Noise | Aerial Dispersion | Local Residents, Employees | Low | Low | Low | Low – Equipment generates very low level of noise. | Regular servicing of the WWTP by a trained operative as per the manufacturer's instructions. | Low |
| Visual | N/A | Local Residents | Low | Low | Low | Low – WWTP is located within an industrial area not adjacent to any residential location. | Regular maintenance and housekeeping of WWTP. | Low |
| Odour and VOC's | Aerial Dispersion | Local Residents, Employees | Low | Low | Low | Low – Circulation of the wastewater effectively will create equal dissolved oxygen throughout hence promote odour-free aerobic digestion | Monitoring and increasing oxygen supply ensures that the aerobic bacteria have the oxygen they need to aerobically digest BOD. This will help to control odours as anaerobic digestion will slow down. | Low |
| Waste Storage | Land, Surface, and soil | Local Environment | Low | Low | Low | Low – Wastewater goes through an extensive process of thickening, digestion, dewatering, and finally disposal. | Adequate sludge management – including plant design, operation, and frequency of desludging. | Low |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Discharge to Sewer System | Sewer system | Sewer undertaker/Local Environment | Low | Low | Low | Low – Wastewater is passed through extensive screens and clarifiers which remove suspended solids before sent to secondary treatment where the plat provides a suitable environment for physiochemical treatment process to remove soluble organic matter. | Regular servicing and monitoring of the WWTP by a trained operative as per the manufacturer's instructions. | Low |
| Damage to WWTP causing leaks and possibly spillage | Spillage | Local Environment | Low | Low | Low | Low – WWTP maintenance and continuous monitoring of performance by trained maintenance staff | Regular servicing and monitoring of the WWTP by a trained operative as per the manufacturer's instructions. | Low |

# 3.0 ACCIDENT MANAGEMENT

## 3.1 Emergency Contacts

| | |
|---|---|
| Emergency Services | 999 |
| Local Police | 0300 333 3000 |
| Environment Agency Hotline | 0800 807 060 |
| Electricity Supplier | EDF Energy |
| Local Authority | Cheshire West and Chester Council |
| Waste Disposal Contractor | VEOLIA |
| Fuel Supplier | AID Fuel |

## 3.2 Company Contacts (Out of hours)

Operations Managers – Rui Sardinha
Health, Safety & Environmental Officer – Nathan Rogers

## 3.3 Environmental Accident Management Plan

| Pollutant Model | | | Judgement | | | | Action | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Pathway** | **Receptor** | **P** | **C** | **M** | **Justification of Magnitude** | **Consequences** | **Actions to be taken** |
| Plant Failure (Hydraulic Leaks, Damaged equipment) | Potentially polluting liquids leak into the building where the boilers are housed or onto the hard surfaced ground outside. | Environment | Low | Med | Low | Low - Very little likelihood of occurrence. All equipment subject maintenance regime. | Potentially polluting liquids flow onto hard surfaced area of facility. | Inform site manager.<br><br>Isolate spill using spill control kits or adsorbent material. Monitor leak and prevent any liquid from entering drains.<br><br>Drain any contaminated tanks, clean any spillage, and dispose of waste as appropriate.<br><br>Monitor external areas to ensure no further contamination. Record the incident.<br><br>Inform Local Authority or Environment Agency if necessary.<br><br>Review Operations and Management System. |
| Serve weather events | Flooding, Wind damage, Ice/Frost | Plant and equipment<br><br>Site Conditions | Low | Med | Low | Low – Site not located in flood zone or adjacent to surface water. | Damage to plant and equipment | Cease operations if required, assess damage and record incident.<br><br>Inform site manager.<br><br>Inform Local Authority or Environmental Agency if necessary. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Arson/Vandalism | | Plant & Equipment | Low | Med | Low | Low – Site is as secure as possible. All areas locked when not manned. All outside gates and doors locked.<br><br>The site has no public access. | Damage to equipment | Assess damage, record incident, and review site security<br><br>Mitigate any damage/pollution caused.<br><br>Inform site manager<br><br>Inform Local Authority or Environmental Agency |
| Fire | Spread from source of ignition | Site buildings | Low | Med | Med | Med – No ignition sources permitted near flammable materials.<br><br>Fuel must be stored to prevent fire. | Fire could spread to site buildings, subject to wind direction and strength.<br><br>Potential for serve damage to property and potential loss of life from fire/smoke inhalation | Raise alarm on site<br><br>Call 999<br><br>Ensure personal are alerted evacuated and accounted for from danger area, following the fire evacuation plan.<br><br>If able switch off electricity/fuel supplies.<br><br>Follow instruction of emergency teams<br><br>Any firewater disposed or treated appropriately. |