



ABP Kingswinford

Document Title:	Environmental Risk Assessment – Hot Water Boiler & Wastewater Pre-Treatment Variation Application
Revision:	Issue 2.0
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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 pre-treatment wastewater 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 6 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 wastewater pre-treatment before discharge to sewer. 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
7. Containment	

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. 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. 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. Appropriate stack height to allow for dispersion. The boiler and stack shall be associated with written maintenance schedule and in accordance with SOP's.	Low

						during start-up and shut down.	<p>The boilers shall be serviced at the frequencies agreed in the maintenance contract by a trained service engineer.</p> <p>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.</p> <p>The boiler stack height shall be sufficient to prevent emissions influencing ground-level air pollution concentrations.</p>	
Emissions from Boiler – NO _x	Aerial dispersion	Staff and local residents	Low	Low	Low	Low – Boiler has a stack for effective NO _x dispersion.	<p>Regular servicing of the boilers by a trained competent operative as per the manufacturer’s instructions.</p> <p>Optimum temperature and oxygen conditions to ensure complete combustion</p>	Low
Emissions from boiler – SO _x	Aerial dispersion	Staff and local residents	Low	Low	Low	Low – Boiler has a stack for effective SO _x dispersion.	<p>Regular servicing of the boiler by a trained operative as per the manufacturer’s instructions.</p> <p>Optimum temperature and oxygen conditions to ensure complete combustion</p>	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. 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	Regular maintenance of the WWTP by a trained and competent operator.	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 plant 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. Routine testing of effluent is carried out by an accredited laboratory as well as by the utility provider.	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
Containment/Bunding	Spillages	Local Environment	Low	Low	Low	Low - All areas of the site which require containment will be 110% banded.	Regular monitoring of site bunding is part of ABP SOP.	Low
WWTP Chemicals	Spillages	Local Environmental	Low	Low	Low	Low- storage in intermediate bulk containers under continuous maintenance and monitoring by a trained operative.	Continuous monitoring and maintenance by a trained operative as per manufacturer's instructions and ABP SOPs. Chemicals used in the WWTP (and throughout the site) are removed from the final effluent with the sludge through the sludge dewatering process, before it is released to sewer, where it will undergo further	Low

							treatment. This ensures risk of chemical pollutants entering freshwater environments via effluent.	
Pests	Land, water	Local Residents and Employees	Low	Low	Low	Low- Existing pest control measures in place including regular inspections of monitoring points and machinery.	Regular inspection of monitoring points and machinery as well as installations of pest control monitors that are maintained by trained operatives.	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 – Ewelina Jakin

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.	<p>Inform site manager.</p> <p>Isolate spill using spill control kits or adsorbent material. Monitor leak and prevent any liquid from entering drains.</p> <p>Drain any contaminated tanks, clean any spillage, and dispose of waste as appropriate.</p> <p>Monitor external areas to ensure no further contamination. Record the incident.</p> <p>Inform Local Authority or Environment Agency if necessary.</p> <p>Review Operations and Management System.</p>

Serve weather events	Flooding, Wind damage, Ice/Frost	Plant and equipment 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. Inform site manager. 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. The site has no public access.	Damage to equipment	Assess damage, record incident, and review site security Mitigate any damage/pollution caused. Inform site manager Inform Local Authority or Environmental Agency

Fire	Spread from source of ignition	Site buildings	Low	Med	Med	<p>Med – No ignition sources permitted near flammable materials.</p> <p>Fuel must be stored to prevent fire.</p>	<p>Fire could spread to site buildings, subject to wind direction and strength.</p> <p>Potential for serve damage to property and potential loss of life from fire/smoke inhalation</p>	<p>Raise alarm on site</p> <p>Call 999</p> <p>Ensure personal are alerted evacuated and accounted for from danger area, following the fire evacuation plan.</p> <p>If able switch off electricity/fuel supplies.</p> <p>Follow instruction of emergency teams</p> <p>Any firewater disposed or treated appropriately.</p>
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