Phase 1 Preliminary Risk Assessment

Widdington Recycling Ltd

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SITE DETAILS

Widdington Recycling Ltd

Haverhill WTS

Falconer Road

Haverhill

Suffolk

CB9 8QE

OPERATOR DETAILS

Widdington Recycling Ltd

Haverhill WTS

Falconer Road

Haverhill

Suffolk

CB9 8QE

DOCUMENT REFERENCE

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APPENDICIES

1. EXECUTIVE SUMMARY

This executive summary forms part of the Phase 1 Preliminary Risk Assessment (PRA) (K303.4~11~001) and must be read in conjunction with the information contained therein.

The ownership, Widdington Recycling Ltd, is preparing to re-establish the planning permission previously approved by West Suffolk Council (E/97/2190/P) in August 1997 for Haverhill Waste Transfer Station (WTS), Falconer Road, Haverhill, Suffolk, CB9 8QE. The planning permission has since lapsed.

This PRA has been recommissioned to accompany the prospective planning application, and to satisfy any concerns held by the planning authority (West Suffolk Council) regarding potential contaminants which may have arisen across the use the of the site.

The previous instruction from the planning authority was as follows:

"You state under existing use on the application form that the land is not subject to any know contamination. A phase 1 site investigation report undertaken by a suitably qualified contaminated land specialist should be submitted to confirm that this is the case".

This report is a product of a site reconnaissance visit and review of up to date environmental data.

The PRA shall include details of previous land use, a site investigation survey of the extent, scale and nature of contamination and an assessment of the potential risks to:

- Human health
- Property
- Adjoining land
- Groundwaters and surface waters
- Ecological systems and
- Archaeological sites and ancient monuments

Review of available information, a site walkover and use of aerial imagery were used to identify the potential sources of contamination from any prior activities carried out on site.

The Conceptual Site Model and Preliminary Risk Assessment (Table 5 and Table 6 respectively in Section 6.2) reviewed the potential sources, considered the risk management measures proposed and concluded that there is a low residual risk, with regard to impact on controlled waters, local ecology, workers on the proposed development and end users.

2. INTRODUCTION

2.1. Context

This PRA has been commissioned to accompany the prospective planning application for Haverhill Waste Transfer Station (WTS), Falconer Road, Haverhill, Suffolk, CB9 8QE, and to satisfy any concerns held by the planning authority (West Suffolk Council) regarding potential contaminants which may have arisen across the use the of the site.

2.2. Objective

The objective of the site reconnaissance visit and PRA was to assess the likelihood of potential contamination at the site owing to the historic use of the site and the proposed end use.

2.3. Methodology

This PRA has been compiled in accordance with the guidance provided by the Environment Agency regarding *Land Contamination Risk Management (LCRM)*[1], which replaced the former Contaminated Land Report 11 (CLR11), *Model Procedures for the Management of Land Contamination* when it was published 8th October 2020.

This PRA has been produced on the basis of a desktop review of available documents, and a site walkover conducted by Graeme Outridge (Senior Consultant).

This is supplemented by information provided by the *Enviro+Geo Insight Report* (Appendix A) in respect of; geology, mining & ground stability, historic maps, sensitive land uses, industrial land uses, hydrology, hydrogeology, pollution incidents, waste facilities, COMAH sites, consents, permits and flooding. Based on this information and a site walkover, an initial conceptual site model was developed for the site (see Table 5 in Section 6.2).

2.4. Limitations and Exceptions

This report has been prepared on behalf of the client in accordance with the instruction and information provided by Widdington Recycling Ltd, if any third party wishes to rely on the information contained within this report, then written approval must be sought from Wiser Environment Limited.

The information and opinions contained within this report are constrained by the limited data upon which it is based and the timescales within which it was produced. The information reviewed should not be considered as exhaustive and any information provided has been

[1] Land contamination risk management (LCRM) - GOV.UK 8th October 2020 (updated 19th April 2021)

taken in good faith. Where information is not available at the time, which may influence or alter the opinions contained within the report, becomes available at a later date, we reserve the right to review and incorporate such information as an addendum to the original report. The findings and opinions conveyed via this assessment are based on information obtained from a variety of sources as detailed within this report, and which Wiser Environment believes are reliable. Nevertheless, Wiser Environment cannot, and does not, guarantee the authenticity or reliability of the information it has relied upon. Where potential or indefinable risks are referred to within the report, further investigation may be required to confirm such risk.

The report represents the findings and opinions of experienced environmental consultants. Wiser Environment does not provide legal advice and the counsel of lawyers may also be required. Lastly, it should be noted that the following were not included as part of the agreed scope of works with the client: intrusive investigation, geotechnical assessment, controlled waters assessment, detailed ecological surveys, or liaison with the Local Authority.

Though drafted according to current guidance, where it is intended to use this information as a basis for discharging contaminated land conditions on any future planning permission, this report and its findings will require review following consultation with the Local Authority. Any additional information provided at that stage, changes to guidance, legislation or information may alter the findings of this report.

3. SITE DETAILS, HISTORY AND LAND USE

3.1. Site Location

The site, national grid reference number TL 68062 44529 is approximately 1.27 ha (3.13 acres). The site is bordered by a 2.5m high screening bund on the western margin, mature tree belts on the western and south-western boundary and a mature hedgerow, supplemented by leylandii trees on the northern boundary. Beyond the site boundary lies industrial units, vehicle storage, residential properties, and a former railway line. The site falls under the planning jurisdiction of the West Suffolk District Council. The site layout is shown in Drawing WIDD/HAV/MRF/03.

3.2. Historic Land Use

Historic Ordnance Survey maps were provided within the Enviro+Geo Insight report (Appendices A and B) and reviewed to identify historic land uses. These maps are on a scale of (1:10,000) and (1:10,560).

Table 1 Historic Land Use

YEAR	ON SITE	SURROUNDING LAND
1877 - 1880	Unspecified Works	The site is surrounded by vegetation and agricultural land. Labelled features include an intersection of two rail ways within 100m of the southern side of the site. In the wider surrounding (750m), there is vegetation, roads, and a sewage tank. A stream flows adjacent to the north-western corner of the site, the water flow direction is towards the Northeast.
1880 - 1896	Unspecified Works	An old clay pit labelled adjacent to the eastern boundary of the site and part of the southern corner of the site.
1896 -1960	Clay Pit	Labelled features include Willow Farm, some 60m north of the site and Sturmer End, adjacent to the north of the site.
1960 -1970	Clay Pit	Major residential and industrial developments on the other side of the rail ways intersection, in the west direction.
1970 - 1986	Clay Pit	Area of Sturmer End, adjacent to the north of the site developed with addition of a poultry house and electricity substation.

YEAR	ON SITE	SURROUNDING LAND
		Industrial development adjacent to the eastern boundary of the site. Railway is dismantled.
1986 - 2023	Undeveloped	Industrial areas surrounding the site develop further. The area of the site remains undeveloped.
2023-2024	Permitted as WTS in 2023 (EA/EPR/WE8118AB) operated by Widdington Recycling Ltd	Essentially unchanged.

3.3. Recent Land Use

The land on site has been derelict land throughout recent past. Surrounding land has been developed for industrial use.

3.4. Surrounding Land

Within 250m of the site, there are potential contaminative industrial locations, e.g., a petrol station, a waste transfer station, waste exemptions, hazardous substance storage and usage for industrial processes, electricity sub-station. Pollution incidents have been reported around the area since 2006 as well as licensed pollutant release.

3.5. Environmental Permits, Incidents and Registers

3.5.1. Waste and landfill

There are no records of landfill sites within 500 m of the site boundary.

The site is permitted as a household, commercial and industrial waste transfer station (EA/EPR/WE8118AB/) since 23/03/2023, operated by Widdington Recycling Ltd.

There is one surrendered waste site within 250 m of the site, previously permitted as a household, commercial and industrial waste transfer station (EA/EPR/RP3995NP).

3.5.2. Dangerous Substances Inventory Sites

One consent for storage of various substances held by AOC Resin UK Ltd. located 430 m west of the site.

3.5.3. Licensed Discharge Consents

There is one active discharge to controlled waters within 250 m of the site, which is Anglian Water's sewage final/treated affluent or storm waters to the Stour Brook River.

3.5.4. Planning Hazardous Substance Consents and Enforcements

There are four authorised discharges of List 1 dangerous substances (Mercury and Cadmium) which are on List I of European Directive E 2006/11/EC and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015 within 500 m of the site. One of four authorised discharges is active.

3.5.5. Dangerous or Hazardous Sites

Two historical Control of Major Accident Hazards (COMAH) lower tier operators within 500 m of the site, in an area located 319 m west of the site.

4. ENVIRONMENTAL SETTING

4.1. Geology

4.1.1. Artificial and Made Ground

As described within the Site Reconnaissance (Section 5), much of the site sits on an impermeable concrete layer and there are plans in place to cover the entire surface with concrete. The Groundsure Report (Appendix B) identifies that there is artificial or made, worked, infilled, disturbed, and landscaped ground at 1:50,000 scale.

4.1.2. Superficial and Drift Geology

Superficial geological depositional features described as Lowestoft formation, River terrace deposits, and alluvium were identified within 500 m at 1:50,000 scale. The maximum to minimum superficial permeability within 50 m was very high to high respectively with intragranular flow.

4.1.3. Bedrock Geology

The bedrock geology was Lewes nodular chalk formation and Seaford chalk formation (undifferentiated) – chalk of Turonian age. The bedrock permeability is very high and fractured. Records within 500 m show that there are linear features at the ground or bedrock surface at 1:50,000 scale. The linear features are of six main types: rock, fault, fold axis, mineral vein, alteration area or landform.

4.2. Radon

The site is measured as a low probability radon area of below 1%. No radon protective measures are necessary in the construction of any new dwellings or extensions in this area.

4.3. Ground Workings

Three instances of historical ground excavation at the surface (within 250m) were identified and labelled as “Old clay pit”, “Unspecified pit” and “Old clay pit” in the years 1896, 1924 and 1899 respectively. There is a possibility that these features were not backfilled.

4.4. Mining

Data indicates underground mine works such as adits and seam workings which could pose a potential risk. There are generalised areas which may be historically affected by tin mining, clay mining, gypsum extraction, coal mining, salt, and brine mining.

4.5. Boreholes

Two confidential boreholes were identified within 250 m in the Groundsure Report.

4.6. Estimated Background Soil Chemistry

There are two records established on site of estimated background soil chemistry. The values are primarily estimated from rural topsoil data collected at a sample density of approx. 1 per 2 km^2. Within areas where rural soils are not available then estimation is conducted on stream sediment data. The data recorded on site is as follows:

BGS records within 50 m showed a likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil.

4.7. Railway and Tunnels

An historical railway intersection run along the western boundary of the site. Historical maps show that this was dismantled in the 1970s.

4.8. Hydrogeology

4.8.1. Superficial Aquifer

The site is underlaid by a Secondary A superficial aquifer, characterised by permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

4.8.2. Bedrock Aquifer

The site is underlaid by a Principal bedrock aquifer, characterised by a geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.

4.8.1. Source Protection Zones and Water Abstractions

The site lies in a Source Protection Zone 3, with a groundwater abstraction licence point 437m west of the site. Source Protection Zone 3 is the area around the supply source within which all the groundwater ends up at the abstraction point.

4.8.2. Groundwater vulnerability

The site lies in an area of medium vulnerability of both the superficial and bedrock aquifer. These areas have intermediate characteristics between high vulnerability (able to easily transmit pollution to groundwater) and low vulnerability (provide the greatest protection from pollution).

4.9. Hydrology

4.9.1. Detailed River Networks

Two inland rivers, one 63 m southwest of the site, one 203 m north of the site, both not influenced by normal tidal action and both containing water year-round in normal circumstances.

4.10. Flood risk

The site is an area of very low risk of flooding from rivers and the sea.

4.10.1. Historical flood events

One flood event recorded 127 m north of the site in 1968, due to the main river exceeding channel capacity.

4.10.2. Flood Defences

No flood defences records within 250 m of the site.

4.10.3. Surface water flooding

The highest risk of surface water flooding on site is a maximum modelled depth between 0.1 m and 0.3 m in a 1 in 30-year return period. This is localised mainly in a small specific area at the eastern boundary.

4.10.4. Groundwater flooding

The highest risk of groundwater flooding on site is moderate.

4.11. Designated Environmentally Sensitive Sites

The Haverhill Railway Walks Local Nature Reserve lies adjacent to the western boundary along the former railway track.

5. SITE RECONNAISSANCE

A site walkover was undertaken by Graeme Outride (Senior Consultant) of Wiser Environment Limited on 23rd April 2024. Photographs were taken during the site walkover and are presented within Appendix C.

5.1. Description

The site is approximately 1.27 ha and is situated approximately 1 km to the southeast of the centre of Haverhill in the county of Suffolk. The site is operational but still undergoing construction. Construction of the Waste Transfer Station building, and the Apron is already complete. There is a concrete batching plant towards the rear excavated soil stockpiled. A new fire hydrant and drainage have been installed and a wash bay constructed adjacent to the Waste Transfer Station.

5.2. Topography

The site is largely flat, and the ground is levelled. The western boundary is elevated while the land towards the east and north is steep.

5.3. Structures

No existing structure as the land was hard standing only the new waste transfer station (90 m × 30 m × 14 m), steel portal frame, open fronted with steel cladding on the southern sides and back with LED lighting throughout.

5.4. Surface

Currently approximately 30% of the Site surface is covered with concrete. There are also stockpiles of excavated sub-soils on site. The wholistic plan is to cover the entire yard in concrete as there is ponding and pooling of water on the surface.

5.5. Vegetation

There is estimated hedging and semi- mature trees on the western and northern boundaries.

5.6. Storage Tanks

No existing storage tanks remain on the site. Storage of 1000l of AdBlue and 5000l fuel in bunded tanks.

5.7. Material Storage and Use

Some chemical storage is being done on the site.

5.8. Wastes

All waste received on site as well as excavated waste contrary materials such as tyres, plastic and fines not stored on the impermeable surface need to be removed at the earliest opportunity.

5.9. Emissions

No emissions were detected during the site walkover only surface water runoff was observed.

5.10. Drainage

Drainage is being installed on the site. New fire hydrants have been installed on the site. Drainage interceptors have also been installed but these are not standard as they are only able to trap sediments but unable to hold contaminants such as oils. Two separate sewer systems are in place – A foul system and a clean system.

5.11. Asbestos Containing Materials

No possible asbestos containing materials were detected during the site walkover.

5.12. Spills and Discharges

There were no spill kits in place during the site walkover. A minor hydraulic oil leak was observed. A spill kit and clean up procedures are needed on site.

5.13. Neighbours

The site is surrounded by nearby industrial estates with immediate neighbours on all sides.

5.14. Previous Investigations and Reports

There are no records of previous ground investigations at the site and given the lack of historical development it is highly unlikely that any have ever been conducted.

5.15. Overhead Cables

No overhead cables in the vicinity.

5.16. Other

CCTV and security gates have been installed. Access to the site is still possible through the unfinished sections in the Eastern boundary where a poured concrete wall will be constructed.

6. INITIAL CONCEPTUAL SITE MODEL

6.1. Introduction

In developing a Conceptual Site Model for the site, possible pollutant linkages are determined by identifying potential sources of contamination, potential receptors, and likely pathways between them. In order for a pollutant linkage to be present all three, i.e., source, pathway, and receptor, need to be present. A preliminary risk assessment has been undertaken using the methodology described to establish the degree of risk and which potential pollutant linkages require further consideration.

A source of pollution may be a potentially polluting activity or store of the contaminating substance – for example fuel storage, leaks of liquids to the ground or emission from waste processes. Potential sources of pollution may be present in, on or under the ground or in the vicinity of the site. Pathways are routes by which a potential source of pollution can or is reaching a receptor – these can be natural pathways through permeable soils or the air, or manmade pathways such as underground pipework.

Receptors are those adversely affected by the contamination. These include but are not limited to; humans (e.g., occupants of nearby industrial or residential properties); groundwater (and aquifers) and surface water that could be contaminated, potentially affecting drinking water and the ecology; and buildings.

Assessment of risk is based on the probability of receptor exposure to the identified source and the consequences of such exposure.

Risk management, which can include site surfacing, formal management systems, legal requirements; is then considered to provide an overall residual risk.

A matrix is used to determine overall risk and uses the following definitions:

Table 2 Probability of Exposure

PROBABILITY OF EXPOSURE	
High	Exposure is probable: direct exposure likely with no / few barriers between hazard, source and receptor.
Medium	Exposure is probable: feasible exposure possible, barriers to exposure less controllable.
Low	Exposure is unlikely: several barriers exist between hazardous source and receptors to mitigate against exposure.

PROBABILITY OF EXPOSURE	
Very Low	Exposure is very unlikely: effective, multiple barriers in place to mitigate against exposure.

Table 3 Consequences of Exposure

CONSEQUENCES OF EXPOSURE	
High	The consequences are severe: sufficient evidence that short or long-term exposure may result in serious damage.
Medium	Consequences are significant: sufficient evidence that exposure to hazard may result in damage that is not severe in nature and reversible once exposure ceases (e.g. irritant)
Low	Consequences are minor: damage not apparent though reversible adverse changes may occur
Very Low	Consequences are negligible: no evidence of adverse changes following exposure

Comparison between probability and consequence provides the overall risk which is reached as follows:

Table 4 Assessing Overall Risk

		CONSEQUENCES			
		Very Low	**Low**	**Medium**	**High**
LIKELIHOOD	**High**	Low	Medium	High	High
	Medium	Low	Medium	Medium	High
	Low	Low	Low	Medium	Medium
	Very Low	Very Low	Low	Low	Low

6.2. Initial Conceptual Site Model and Preliminary Risk Assessment

Potential sources of pollution, pathways, and receptors, identified primarily through historical records are listed in Table 5 below with potential environmental risk identified.

Table 5 Initial Conceptual Site Model

RECEPTORS	PATHWAYS	SOURCES
Groundwater Local ecology	Groundwater flow through bedrock Infiltration through made ground and bedrock Lateral migration within groundwater Plant uptake and vertical migration	Presence of made ground Waste operations on site.
Workers during the development End users – future operators of the WTS	Direct exposure: inhalation, dermal contact, ingestion building services.	Development works and waste operations on site

Table 6 Preliminary Risk Assessment

Source			Pathway	Receptor	Risk Assessment			Comment / Risk / Management Potential Contamination	Residual Risk
Potential Contaminating Uses	Potential Contaminating Source	Potential Contamination			Likelihood	Consequences	Risk		
Previous use of the site	Made ground	Hazardous substances contained in the made ground	Infiltration through soil Lateral migration within groundwater Direct exposure: inhalation, dermal contact, ingestion building services. Plant uptake and vertical migration	Groundwater Local ecology Workers during the development End users – future operators of the WTS	Very low	High	low	Desk based study shows that previous uses of the site and surrounding land caused no recorded pollution incidents. The site has been undeveloped land for a number of years.	Very Low

Source			Pathway	Receptor	Risk Assessment			Comment / Risk / Management Potential Contamination	Residual Risk
Potential Contaminating Uses	Potential Contaminating Source	Potential Contamination			Likelihood	Consequences	Risk		
Site development works	Made ground	Hazardous substances contained in the made ground	Infiltration through soil Lateral migration within groundwater Direct exposure: inhalation, dermal contact, ingestion building services. Plant uptake and vertical migration	Groundwater Local ecology Workers during the development End users – future operators of the WTS	Very low	High	low	Desk based study shows that previous uses of the site and surrounding land caused no recorded pollution incidents. The site has been undeveloped land for a number of years.	Very Low

Source			Pathway	Receptor	Risk Assessment			Comment / Risk / Management Potential Contamination	Residual Risk
Potential Contaminating Uses	Potential Contaminating Source	Potential Contamination			Likelihood	Consequences	Risk		
Vehicle movements (waste delivery and dispatch)	Fuels and oils spills	Hydrocarbons	Through the made ground under site surface	Groundwater, local ecology	Low	High	Medium	Site covered by an impermeable concrete surface, and sealed drainage system. All vehicles accessing site inspected and maintained regularly. Regular housekeeping of site surface to ensure any spill is captured promptly. Spill kits to be placed on site and all employees trained in their use.	Low
Waste storage Waste treatment	Waste leaching waters	Hydrocarbons, heavy metals, other hazardous substances leaching from the waste	Water runoff	Land, surface water, groundwater, local ecology.	Very Low	High	Medium	The waste storage areas are covered by roofing or wastes are stored in weather proof containers. Site covered by an impermeable concrete surface, and sealed drainage system.	Low

Source			Pathway	Receptor	Risk Assessment			Comment / Risk / Management Potential Contamination	Residual Risk
Potential Contaminating Uses	Potential Contaminating Source	Potential Contamination			Likelihood	Consequences	Risk		
	Dust and litter	Litter debris	Air: windblown physical transport and deposition	Land, surface water, local ecology	Medium	Low	Medium	Waste received within designated area. Regular housekeeping of site surfaces to remove litter and debris and prevent spread. Site Operational Procedures (SOPs) and training provided to all relevant staff to prevent litter and debris accumulating. Fencing around site collects all loose litter and is cleared appropriately.	Low
	Fire	Hazardous substances liberated in air and water	Spread through physical contact; fanned by winds	Air, surface water, groundwater, local ecology, population.	Low	High	Medium	Wastes containerised and all stored on an impermeable surface with sealed drainage system. Operational areas of site are non-smoking zones. 24 hr CCTV system in place across site. Site operated in accordance with a Fire Prevention Plan.	Low

7. PHASE I CONCLUSION AND RECOMMENDATIONS

The Conceptual Site Model identified plausible contaminative linkages at site mainly related to the main site activities of waste storage and treatment, with possible spillages from vehicles, possible leaching of hazardous substances from the waste, spread of dust and litter and possible pollution in case of fire..

The Preliminary Risk Assessment concludes that there is a low risk of contamination across the conceptual model, driven principally by:

- No known contaminative previous use of the site.
- Site covered by an impermeable concrete surface, and sealed drainage system.
- The waste reception and storage areas are covered by roofing or wastes are stored in weatherproof containers.
- All vehicles accessing site inspected and maintained regularly.
- Fencing around site collects all loose litter and is cleared appropriately.
- Operational areas of site are non-smoking zones.
- 24 hr CCTV system in place across site.
- Site operated in accordance with a Fire Prevention Plan and Management System
- SOPs and training provided to all relevant staff.
- Regular housekeeping of site surface.

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