

# **SITE CONDITION REPORT**

## **Shropshire IVC**

For full details, see H5 *SCR guide for applicants* v2.0 4 August 2008

**COMPLETE SECTIONS 1-3 AND SUBMIT WITH APPLICATION**

**DURING THE LIFE OF THE PERMIT: MAINTAIN SECTIONS 4-7**

**AT SURRENDER: ADD NEW DOC REFERENCE IN 1.0; COMPLETE SECTIONS 8-10; & SUBMIT WITH YOUR SURRENDER APPLICATION.**

1.0 SITE DETAILS	
Name of the applicant	Veolia ES Shropshire Limited (Company number 06256563)
Activity address	SHropshire IVC Veolia ES Shropshire Limited Fenn's Bank, Whitchurch, SY13 3PA
National grid reference	NGR 350600 339100

Document reference and dates for Site Condition Report at permit application and surrender	Application SCR: Land Quality Assessment Former aluminium slag reprocessing plant Fenn's Bank, Whitchurch, SY13 3PA, Date: 20/08/2024, Reference: 30756R1D2
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Document references for site plans (including location and boundaries)	Permit reference (Veolia operation): TBC Former permit reference (Befesa operation): EPR-VP3030BX
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**Note:**

In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
Environmental setting including: <ul style="list-style-type: none"> <li>• geology</li> <li>• hydrogeology</li> <li>• surface waters</li> </ul>	<p><b>Geology</b></p> <p>The site is underlain by glacial deposits comprising alternating layers of Glacial Till and Sand and Gravels. These are mapped as Till in the south of the site and Glacial Sands and Gravels in the north of the site.</p> <p>These strata have been proven to depths of up to 25 m bgl. The bedrock underlying the area are Triassic strata comprising the Branscombe Mudstone Formation (mudstones with partings veined by halite). However, Glacial Clay between the sand layers is not always continuous and is sometimes present at the surface. Geological logs from drilling at the Befesa site (Amec Foster Wheeler, 2017) show the upper 3 m of the soil profile to variably comprise sand, silt, and/or clay.</p> <p>The target strata for the historic brick pits are thought to be the Till, and it is likely that the underlying sand was exposed in some locations due to clay extraction.</p>

	<p><b>Hydrogeology</b></p> <p>The sand and gravel deposits are classified by the Environment Agency as a Secondary A aquifer, and the Till is a secondary (undifferentiated) aquifer. The aquifer is a Water Framework Directive Groundwater Body, named the Weaver and Dane Quaternary Sand and Gravel Aquifers (water body ID GB41202G991700). Groundwater levels are very close to ground level in the winter months to the south of the site, and groundwater flow is towards the north or northwest. Anecdotally, the brick pits that pre-dated the Wardle site are thought to have been abandoned when inflowing groundwater could no longer be controlled, suggesting that the excavations extended beyond the clay into the underlying sand and gravel.</p> <p><b>Hydrology</b></p> <p>The Bull's Head Pool lies c. 190 m to the southwest of the site, and the Wheatsheaf Pool lies c. 175 m to the south. A ditch runs northwest from the Bull's head pool, to join a brook running northeast approximately 70 m northwest of the site. A smaller ditch (the field ditch) runs from a large pool at the base of the landfill along the western site boundary to join this brook, which continues to run northeast, under Fenn's Bank Road. This is known locally as the Red Brook (note that mapping shows this to be a tributary of the Red Brook, which it joins c. 675 m northeast of Fenn's Bank Road; however, this report refers to the more local watercourse as the Red Brook). The general direction of drainage is to the north. The Red Brook is a tributary of the River Dee, which lies c. 13 km to the northwest at its closest point. The site is in the Wych Upper (Worthenbury Upper) surface water catchment, within the Worthenbury Operational Catchment, within the Dee Management Catchment. The Wych Upper Water Body (surface water) has poor ecological status. A point source of ammonia from landfill leachate is listed as a Reason for Not Achieving Good status (RNAG). The nearest Environment Agency (EA) water quality monitoring point on the Red Brook downstream of the site is NW-RSN0534, described as 'Red Brook 100 m downstream from confluence with Stagg Brook'.</p> <p>On the site itself, there is a storm water lagoon in the south of the site, and a storm ditch and reedbed in the north of the site. The overflow from the storm ditch is to the site drainage system, which is linked via a pipe to an outfall into the Red Brook. A field ditch runs past the western site boundary from the landfill to the Red Brook. Observations during recent site visits indicate that a drainage channel has been excavated in the northwestern corner of the site linking to the field ditch, to help drain the site.</p>
<p>Pollution history including:</p> <ul style="list-style-type: none"> <li>• pollution incidents that may have affected land</li> <li>• historical land-uses and associated contaminants</li> <li>• any visual/olfactory evidence of existing contamination</li> <li>• evidence of damage to pollution prevention measures</li> </ul>	<p>The site was undeveloped until 1998 when Wardle built a Total Reclamation Plant (TRP) to recycle aluminium salt slag generated from the aluminium works to the south. The Wardle site is shown on the earliest historical maps as Fenn's Bank Brick and Tile works. Clays were excavated from three pits. Anecdotal information reported by Entec (2008) suggests that excavation of the clay ceased when the volume of water flowing into the pits could not be controlled. The pits were left flooded, creating Bulls Head, Wheatsheaf and North pool. Wardle Metals began operations at the aluminium works in World War II and began depositing waste material in the North Pool from this time. Waste disposal volumes were around 1,000 m<sup>3</sup>/year in the 1950s but increased as production volumes increased; by the early 1990s 300,000 m<sup>3</sup>/year were deposited. The pool was filled above the water level by 1993, and in 1995 there was a large-scale fish kill in</p>

Wheatsheaf pool caused by pollution from the operations. In 1996 changes were made to the level controls on Wheatsheaf and Bull's Head pools, and leachate pumping commenced. Another pollution incident affected Bull's Head Pool in 1998, and the Total Reclamation Plant (TRP) was commissioned. In 1999, leachate abstraction from waste boreholes ceased, and leachate abstraction from a perimeter ditch to the TRP commenced. In 2002 the landfill was reprofiled and capped, with leachate pumping to the TRP. This is reported to have ceased in 2003, although monitoring was ongoing. The TRP was operated from 2000 to 2004 by Remetal Total Reclamation Plant Limited, and then operated by Befesa Salt Slags Limited from 2004 until 2020, when the process closed down. Befesa Salt Slags was sold to Markos Properties (Whitchurch) Ltd in 2023 and renamed Markos Commercial Limited.

The site operated under an environmental permit (ref EPR-VP3030BX). The site is adjacent to, and downgradient of, a landfill formed of waste aluminium slag, which has been remediated by the Environment Agency. Leachate from the landfill is known to have formed a plume below the site, and to discharge into local surface water courses. Recent data indicates that emission of leachate from the landfill is ongoing. Furthermore, the landfill has emitted or is emitting gas. While the site was operational, surface water was collected in a lagoon and used in the process. When site operations ceased, surface water was no longer consumed by the process; and in the absence of a formal discharge arrangement, rainfall falling on the site discharged informally via the road system to the nearby Red Brook, and to a field ditch along the south-western site boundary. A site investigation (SI) undertaken between January and July 2024 by HFCL, included soil sampling, installation of gas spikes and boreholes, gas and groundwater monitoring, and surface water sampling. A GQRA was undertaken to assess potential risks to human health and controlled waters receptors. It is concluded that:

- Site data indicate that the operation of the reprocessing plant has not had an impact on soil and groundwater quality that can be distinguished from impacts arising from landfill leachate, deriving from the adjacent landfill. Groundwater and surface water in and around the site are impacted by landfill leachate, with the highest concentrations found off-site close to the landfill (with the exception of fluoride where the highest concentration is measured on site, but at concentrations that are not considered to present a significant risk to controlled waters quality). The likely impact of drainage from the site on receiving surface waters is not considered to be significant, owing to high background concentrations.
- Risks to human health under the current site use, arising from concentrations of potential contaminants of concern in soils, are considered to be low.
- Preliminary indications are that risks arising from soil gas, under the current site use, are low; it is recommended that further monitoring of soil gases is undertaken to confirm this.
- Appropriate health and safety measures with regards to soil and water quality should be implemented for construction work, or maintenance works involving contact with soils and groundwater, or entry into confined spaces.

Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	<ul style="list-style-type: none"> <li>Entec, 2008. Update of the conceptual model of the Wardle Landfill Site</li> <li>Amec Foster Wheeler, 201810. Natural Resources Wales, Wardle Landfill, 2017 Drilling and Monitoring report (final) Environment Agency. <a href="https://environment.data.gov.uk/water-quality/view/samplingpoint/NW/RSN0534">https://environment.data.gov.uk/water-quality/view/samplingpoint/NW/RSN0534</a></li> <li>Entec 2010. Technical Note. Wardle Landfill Borehole Remedial Works and Monitoring Data Review</li> <li>Amec 2011. Technical Note. Wardle Landfill 2011 Annual Monitoring Review</li> <li>Entec, 2010. Technical note. Wardle Landfill Borehole Remedial Works and Monitoring Data Review.</li> <li>Amec 2011. Technical Note. Wardle Landfill 2011 Annual Monitoring Review</li> <li>HFCL, 2021. 30496R1 Befesa Salt Slags Ltd: Water management assessment</li> <li>HFCL, 2021. 30496TN4 Lagoon Investigation</li> <li>HFCL, 2021. 30496TN5 Sampling Programme</li> <li>HFCL, 2022. 30496TN6.1 Dilution calculations</li> <li>HFCL, 2022. 30496TN8 Phosphate</li> <li>HFCL, 2022. 30496TN9.1 Transport Modelling HFCL, 2022. 30495TN11 Final monitoring report</li> </ul>
Baseline soil and groundwater reference data	Land Quality Assessment, Former aluminium slag reprocessing plant Fenn's Bank, Whitchurch, SY13 3PA, Date: 20/08/2024, Reference: 30756R1D2
Supporting information	

3.0 Permitted activities	
Permitted activities	<p>In Vessel Composting - S5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.</p> <p>Receipt of green and food waste and other suitable waste inputs with the purpose of composting under aerobic conditions in closed concrete tunnels fitted with air abatement. Stabilisation of sanitised compost may take place outdoors only with the written agreement of the Environment Agency and on an impermeable surface with sealed drainage. Maturation of stabilised compost is carried out externally on an impermeable surface with sealed drainage.</p>
Non-permitted activities undertaken	Associated offices and car parking.
Document references for:	<ul style="list-style-type: none"> <li>202503_REF_FENNSBANKIVC_Receptor plan</li> <li>VES_TD_WREXIVC_100_003 Rev - Shropshire IVC - Proposed Drainage Layout</li> </ul>
<ul style="list-style-type: none"> <li>plan showing activity layout; and</li> <li>environmental risk assessment.</li> </ul>	

**Note:**

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must be based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater we may need to request further information from you or even refuse your permit application.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	
Have there been any changes to the permitted activities?	
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	
Checklist of supporting information	

5.0 Measures taken to protect land	
Checklist of supporting information	

6.0 Pollution incidents that may have had an impact on land, and their remediation	
Checklist of supporting information	

7.0 Soil gas and water quality monitoring (where undertaken)	
Checklist of supporting information	

8.0 Decommissioning and removal of pollution risk	
Not relevant. The facility was never constructed.	

Checklist of supporting information	
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<b>9.0 Reference data and remediation (where relevant)</b>
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Checklist of supporting information	
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<b>10.0 Statement of site condition</b>
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