Novidon Limited

Habitats Risk Assessment

Application for Environmental Permit for Modified Starch Manufacturing Facility and Medium Combustion Plant

Coed Aben Road, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UH

Report Ref: CE-WH-1801-RP10-HRA-Final

CRESTWOOD ENVIRONMENTAL LTD

ENVIRONMENT LANDSCAPE NOISE LIGHTING
ECOLOGY HERITAGE WATER TREES
MINERALS / WASTE AIR QUALITY LAND QUALITY VISUALISATION

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1 SITE DETAILS

1.1 BACKGROUND

1.1.1 This Habitats Risk Assessment supports an application for an Environmental Permit for a modified starch manufacturing facility and a proposed combined heat and power (CHP) plant at Coed Aben Road, Wrexham Industrial Estate, Wrexham, Clwyd, LL13 9UH ***(the Site)***. The Site is operated by Novidon Limited ***(the Applicant and Operator)***.

1.1.2 The Site is used to modify starches to produce high quality wallpaper paste flake and drilling starches for the geological drilling industries. At present approximately 10,000 tonnes of unrefined starch (dry solids) are refined per annum to produce circa 15,000 tonnes per annum of modified starches.

1.1.3 The CHP plant will comprise a Jenbacher J312GS gas engine, which has an electrical output of 524Kw/hr and a recoverable heat output of 659 Kw/hr. Its net rated thermal input is 1363Kw/hr, as a result of which it is classed as a Medium Combustion Plant.

1.1.4 Exhaust gases from the CHP plant would be discharged to atmosphere via a 15m high exhaust. Exhaust gas temperature is 504^{o}C from the engine, but after passing to the steam boiler is circa 80^{o}C.

1.1.5 Government guidance (https://www.gov.uk/guidance/medium-combustion-plant-mcp-comply-with-emission-limit-values) requires compliance with the emission limits stated in EU Directive 2015/2193 'on the limitation of emissions of certain pollutants into the air from medium combustion plants'. Emissions from the CHP plant are therefore required to comply with EU Directive 2015/2193 Annex II, Part 2, Table 2 emission limit values (mg/Nm^3) for new engines and gas turbines, at a temperature of 273K, a pressure of 101.3 kPa and after correction for the water vapour content of the waste gases and at a standardised O2 content of 15 % for engines and gas turbines'. Emissions from the CHP plant are required to meet a strict NOx emission limit of ≤95 mg/Nm^3.

1.1.6 A detailed description of the process is included in the In-process Controls section of the Environmental Permit application.

1.1.7 The centre of the Site is at approximate National Grid Reference SJ 37690 49793.

1.1.8 A search of statutory and non-statutory nature sites, using Magic Map (http://www.natureonthemap.naturalengland.org.uk/), shows the following designations:

- **European Sites within 10 Km radius of Site**
    - Reiver Dee and Bala Lake Special Area of Conservation (SAC)
    - Johnstown Newt Sites Special Area of Conservation (SAC)

- Midland Meres and Mosses Phase 2 RAMSAR

- **Sites of Special Scientific Interest** within 2Km radius of Site
  - There are no SSSIs within 2km of the Site
- Local Nature Reserves within 2Km radius of Site
  - The are no National or Local Nature Reserves within 2Km of the Site Heath
- **Priority Habitat within 2Km radius of Site**
  - There is no Priority Habitat within 2Km of the Site.

1.1.9 **River Dee and Bala Lake SAC** is designated a European Site due to its ecological value as a water course of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation and the presence of atlantic salmon *Salmo salar* and floating water-plantain *Luronium natans*.

1.1.10 The Joint Nature Conservation Committee (JNCC) citation for water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation states:

"This habitat is characterised by the abundance of water-crowfoots Ranunculus spp., subgenus Batrachium (Ranunculus fluitans, R. penicillatus ssp. penicillatus, R. penicillatus ssp. pseudofluitans, and R. peltatus and its hybrids). Floating mats of these white-flowered species are characteristic of river channels in early to mid-summer. They may modify water flow, promote fine sediment deposition, and provide shelter and food for fish and invertebrate animals.

"There are several variants of this habitat in the UK, depending on geology and river type. In each, Ranunculus species are associated with a different assemblage of other aquatic plants, such as water-cress Rorippa nasturtium-aquaticum, water-starworts Callitriche spp., water-parsnips Sium latifolium and Berula erecta, water-milfoils Myriophyllum spp. and water forget-me-not Myosotis scorpioides. In some rivers, the cover of these species may exceed that of Ranunculus species. Three main sub-types are defined by substrate and the dominant species within the Ranunculus community."

1.1.11 **Johnstown Newt Sites Special Area of Conservation (SAC)** is designated because of its importance for the great crested newt *Triturus cristatus.* The JNCC designation for the SAC states:

"This site lies near to Wrexham in north-east Wales and is composed of two post-industrial sites where coal and clay have been extracted. The population of great crested newts Triturus cristatus is one of the largest known in Great Britain and has been the focus of much conservation management over the last few years. Breeding sites are provided in part by a mining subsidence pool, and natural water-filled hollows on clay, whilst other ponds have been created as part of nature conservation management. Terrestrial habitat varies

from marshy grassland, grazed farmland and swamp through to scrub and broad-leaved woodland. Good populations of the widespread amphibian species are also present."

1.1.12 **Midland Meres and Mosses Phase 2 RAMSAR** sites are designated due to their importance as a geographically discrete series of lowland open water and peatland sites in the north-west Midlands of England and north-east Wales. The JNCC Information Sheet states:

"These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 18 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats, reed swamp, fen, carr and damp pasture. Peat accumulation has resulted in the nutrient-poor peat bogs (mosses) forming in some sites on the fringes of the meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora and fauna.

"The site comprises a diverse range of habitats from open water to raised bog.
Ramsar criterion 2 Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane Cicuta virosa and, elongated sedge Carex elongata. Also present are the nationally scarce bryophytes Dicranum affine and Sphagnum pulchrum. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth Glyphipteryx lathamella, the caddisfly Hagenella clathrata and the sawfly Trichiosoma vitellinae."

1.1.13 Table 1 below shows European Sites within 10Km of the Site boundary and SSSIs, LNRs and Priority Habitat within 2km of the Site boundary.

Table 1: European Sites Within 10Km and Sites of Special Scientific Importance and Other Statutory Sites within 2Km of the Site

Type of Designation	Distance from Site
River Dee and Bala Lake SAC	Circa 4.40 Km (east of Site)
Johnstown Newt Sites Special Area of Conservation (SAC)	Circa 6.87 Km (south west of Site)
Midland Meres and Mosses Phase 2 RAMSAR	Circa 4.20 Km (north north west of Site)
Sites of Special Scientific Interest	None
National Nature Reserves	None
Local Nature Reserves	None
Priority Habitat	None

2 RISK ASSESSMENT

2.1.1 The Habitats Directive Matrix in Table 2 below identifies disturbance, habitat loss, nutrient enrichment (i.e. eutrophication), predation, siltation, smothering and toxic contamination as potential risks to habitat sites from Installations.

Table 2: Habitats Risk Assessment

Hazard	Source	Pathway	Receptor	Mitigation	Overall Risk
Disturbance	Noise, vibration and particulate emissions from Site operation and decommissioning.	Air and ground.	River Dee and Bala Lake SAC, Johnstown Newt Sites SAC, Midland Meres and Mosses Phase 2 RAMSAR	It is important to note that the manufacture of modified starches takes places entirely within the confines of an established enclosed building, which has an impermeable concrete floor. The CHP plant will also be located in a dedicated enclosure within the building. The condition of both the building and the concrete floor are good, with no visible defects. Externally, the majority of the Site consists of a concreted yard access area and car park. The condition of the external concrete is good, with no visible defects noted during a Site walkover survey on 3 September 2020. The use of an enclosed building minimises any potential for noise escape from the Site. The manufacturing process and CHP plant are not inherently dusty and dust emissions were not observed, either from the manufacturing process or external concrete and tarmac yard area, during the Site walkover inspection. There were also no noticeable noise emissions external to the building from activities on Site. The predominant source of noise external to the Site was local road traffic using the public highway, especially Coed Aben Road, which is located to the immediate south of the Site and serves Wrexham Industrial Estate. The designated European sites are all located over 4 Km from the Site and the risk of noise and dust emissions impacting habitat sites is considered negligible. To minimise noise emissions, all vehicles, plant and machinery operated at the Site will be maintained in accordance with the manufacturer's specification. Plant and vehicles will be switched off	Negligible.

Table 2: Habitats Risk Assessment

Hazard	Source	Pathway	Receptor	Mitigation	Overall Risk
				when not in use and no activity will be carried out beyond the permitted hours of working.	
Nutrient Enrichment / Eutrophication	Any free liquors, surface water run-off from external yard area. Run-off could contain elevated concentrations of contaminants.	Run-off water and drainage to surface water sewer.	River Dee and Bala Lake SAC. The Site's surface water drainage system is drained to surface water sewer, which outfalls to the Redwither Brook. The Redwither Brook is a tributary of the River Clywedog, which in turn flows into River Dee.	The Site's external yard comprises an engineered concrete and tarmac surfaces (car park) which are drained to surface water sewer, which outfalls to the Redwither Brook. There are two discharge points on the surface water sewer system and both drainage runs are fitted with penstock valves close to and upstream of the discharge points (see Drawing No Fig 2b 'Site Plan – Drainage Layout'). The penstock valves are kept closed as a matter of routine and are only opened as required to allow off Site drainage of clean yard and building roof water runoff. Runoff water is only released if confirmed to be suitable (i.e. there have been no accidental spillages or leakages). Therefore, in the event of an accidental spillage on Site, the penstock valves would already be shut, thereby preventing any inadvertent discharge to the surface water sewer. It is important to note that all manufacturing processes take place inside the building and not on the external yard area. There is no drainage within the building (i.e. it is a fully contained system) and no connection to the external yard drainage system. Therefore, the risk of any free liquors, e.g. from accidental spillage or inadvertent leakage, entering the surface water system and eventually impacting the River Dee and Bala Lake SAC is very low. There are no drainage pathways from the Site to Johnstown Newt Sites SAC or Midland Meres and Mosses Phase 2 RAMSAR.	Very Low.

Table 2: Habitats Risk Assessment

Hazard	Source	Pathway	Receptor	Mitigation	Overall Risk
Habitat Loss	Encroachment, contaminated run-off water, particulate emissions.	Ground, water and air.	River Dee and Bala Lake SAC, Johnstown Newt Sites SAC, Midland Meres and Mosses Phase 2 RAMSAR	Waste waters from the welfare facilities (e.g. toilets and wash basins) and surplus water from wash downs and spent scrubber water from the SMCA scrubber is discharged to foul sewer in accordance with a Trade Effluent Discharge Consent issued by Dwr Cymru Cyfyngedig. The surface water drainage and protection systems are detailed above and there are no pathways to Johnstown Newt Sites SAC, Midland Meres and Mosses Phase 2 RAMSAR. Particulate emissions from the Site are negligible, as the manufacturing process is not inherently dusty and is located entirely within an enclosed building (see above). In addition, the designated European sites are all located over 4 Km distance from the Site. Institute of Air Quality Management (IAQM) Guidance on the Assessment of Mineral Dust Impacts for Planning (May 2016) states that "it is commonly accepted that the greatest impacts will be within 100 m of a source and this can include both large (>30 µm) and small dust particles. The greatest potential for high rates of dust deposition and elevated PM10 concentrations occurs within this distance. Intermediate-sized particles (10 to 30 µm) may travel up to 400 m, with occasional elevated levels of dust deposition and PM10 possible. Particles less than 10 µm have the potential to persist beyond 400 m but with minimal significance due to dispersion." Activities at the Site do not require access to nature sites. Neither will they encroach on such sites.	Very Low.

Table 2: Habitats Risk Assessment

Hazard	Source	Pathway	Receptor	Mitigation	Overall Risk
Predation	Scavenging birds, insects and pests	Ground, water and air	River Dee and Bala Lake SAC, Johnstown Newt Sites SAC, Midland Meres and Mosses Phase 2 RAMSAR. Potentially predation could impact on sensitive fauna and flora (scavenging birds and insects could travel to local nature sites).	The manufacture of modified starches takes places entirely within the confines of an established enclosed building, which has an impermeable concrete floor. The CHP plant will also be located in a dedicated enclosure within the building. The condition of both the building and the concrete floor are good. The manufacture of modified starches does not inherently attract scavenging bids or insects and there is no standing water on site such as ponds or lagoons that could attract gulls or other birds. However, due to the high level of starch that is kept on the Site, rat infestation is a potential problem. To combat this problem, the Operator uses a specialist company to provide pest control by means of poisoned bait. This poisoned bait is located in bait boxes positioned inside and outside the factory. The boxes are checked and re-supplied, as necessary, eight times each year. The specialist pest control contractor is able to carry out emergency visits in the event of any infestations or complaints of vermin etc. In the event of any bird, insect or pest complaints received at the Site, details will be logged in accordance with Operator's Environmental Management System (EMS), which is ISO 14001 accredited, and mitigation measures will be implemented to ensure a high level of control.	Low
Siltation	Suspended solids in run-off water	Water	River Dee and Bala Lake SAC	The external concrete and tarmac (car park) yard area drains to storm water sewer via penstock valves, which are kept closed as a matter of routine and are only opened as required to allow off Site drainage of yard and building roof water runoff. Runoff water is only released if	Very Low

Table 2: Habitats Risk Assessment

Hazard	Source	Pathway	Receptor	Mitigation	Overall Risk
				confirmed to be suitable (i.e. there have been no accidental spillages or leakages). The condition of the external concrete and tarmac are good, with no visible defects noted during a Site walkover survey on 3 September 2020. The surface water sewer drains to the Redwither Brook, which is a tributary of the River Clywedog, which in turn flows into River Dee. Dilution of surface water runoff from the Site within the Redwither Brook, River Clywedog and River Dee is significant and the risk of suspended solids in the Site's surface water discharge impacting the River Dee and Bala Lake SAC is considered very low. There are no drainage connections from the Site to Johnstown Newt Sites SAC and Midland Meres and Mosses Phase 2 RAMSAR sites.	
Smothering	Particulate emissions	Water and air	River Dee and Bala Lake SAC, Johnstown Newt Sites SAC, Midland Meres and Mosses Phase 2 RAMSAR (smothering by dust can interfere with photosynthesis and transpiration and thus effect growth rates and seed set).	As stated above, the manufacturing process takes places entirely within the confines of an established building, which has an impermeable concrete floor. The condition of both the building and the concrete floor are good, with no visible defects. Externally, the Site consists of a concreted yard storage area and car park, which drain to storm water sewer via penstock valves, which are kept closed as a matter of routine and are only opened as required to allow off Site drainage of yard and building roof water runoff. Runoff water is only released if confirmed to be suitable (i.e. there have been no accidental spillages or leakages). The condition of the external concrete and tarmac are good, with no visible defects noted during a Site walkover survey on 3 September 2020.	Very Low

Table 2: Habitats Risk Assessment

Hazard	Source	Pathway	Receptor	Mitigation	Overall Risk
				The manufacturing process is not inherently dusty and particulate emissions were not observed during the Site walkover survey in September 2020, either from the manufacturing process or external concrete and tarmac yard area. The risk of particulate emissions from the Site impacting designated habitat sites is considered very low.	
Toxic Contamination	Particulate emissions, any potentially contaminated run-off water	Water and air	River Dee and Bala Lake SAC, Johnstown Newt Sites SAC, Midland Meres and Mosses Phase 2 RAMSAR	There are no fugitive emissions or direct discharge of potentially contaminated run-off waters to the storm water sewer. All external yard areas comprise engineered concrete and tarmac with drainage system (see above). Emissions to air from the boilers and dryer remain unchanged from those in current use (there are no new associated activities or emissions to the environment from those activities undertaken at the Site and subjected to previous inspections by the Regulator). Although the CHP plant will be a new activity at the Site, it is required to meet a very strict NOx emission standard of 95 mg/Nm^3.	Low

2.1.2 The Habitats Risk Assessment shown in Table 2 above shows that the risks to nature sites from all potential hazards varies from negligible to low, depending on the specific factor being considered.

2.1.3 The manufacturing process is entirely within a dedicated, enclosed building and all discharges to water are either to foul sewer or storm water sewer (via penstock valves). The CHP plant will be located in a dedicated enclosure within the building. The yard area external to the building comprises an engineered concrete pad and tarmac car park that are drained to the storm water sewer, via penstock valves that are kept closed as a matter of routine. This minimises any risk for fugitive escape or emissions of potentially contaminated run-off water to surface water courses. The Site is unlikely to cause nutrient enrichment /eutrophication, habitat loss, predation, siltation or toxic contamination of local watercourses or nature sites.

2.1.4 In the unlikely event that the external concrete and tarmac yard area becomes dusty, a water hose will be used to damp down working areas and the Site access.

2.1.5 In the event of any dust emissions or complaints received about dust or particulate emissions, details will be logged in accordance with the EMS and appropriate mitigation measures implemented.

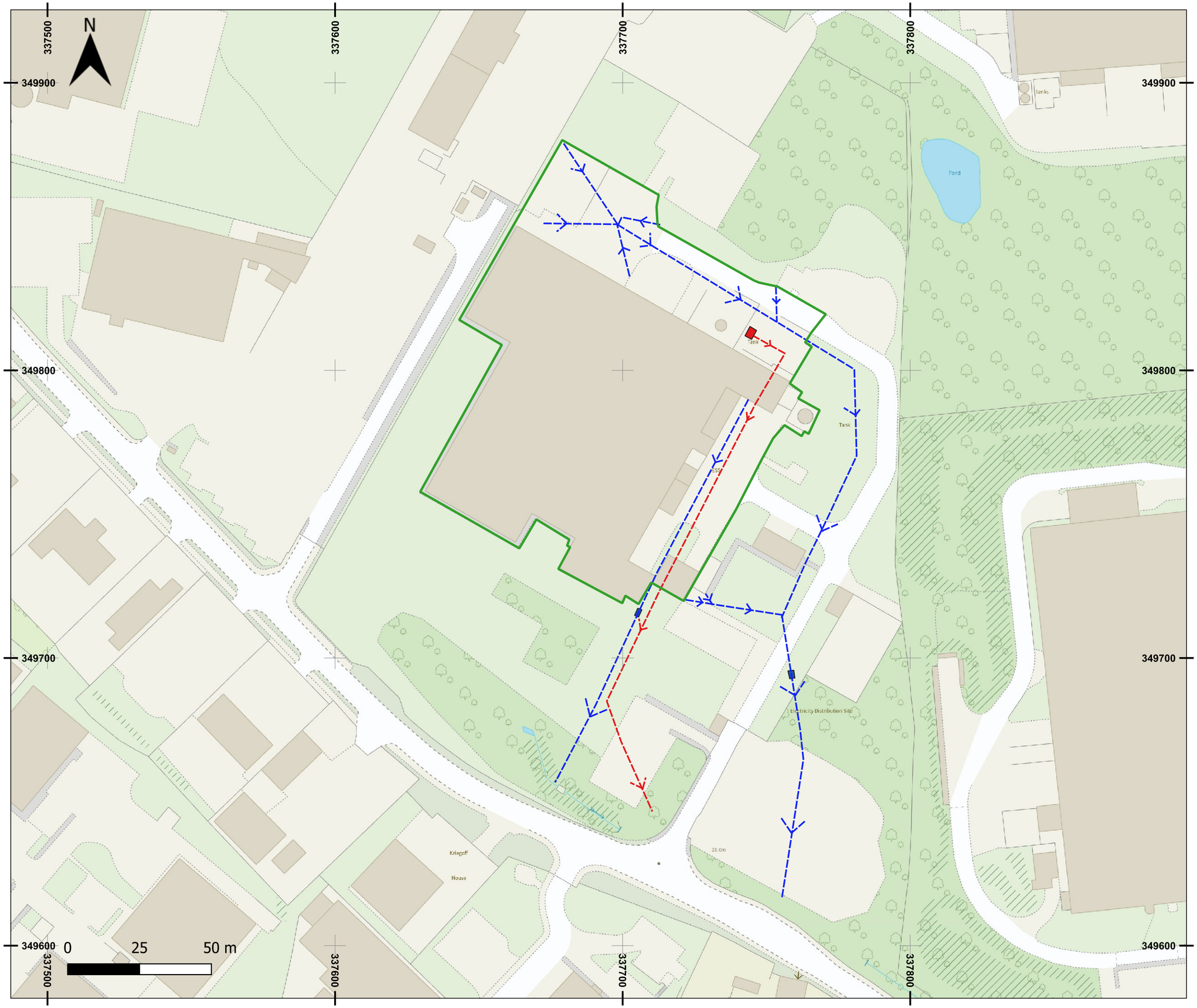
2.1.6 The risk of site activities or particulate emissions causing disturbance, habitat loss, smothering or toxic contamination of nature sites is unlikely.

3 CONCLUSION

3.1.1 The risk of the Site and associated activities causing significant impact to nature is negligible to low.

DRAWINGS

Drawing No CE-WH-1801-DW02, Fig 2b	Drainage Layout	1:1,250 @ A3



Legend:

- Permit Boundary
- Drainage SW
- Drainage (Sewers)
- Penstock Valve

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Client:

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Site: Novidon - Wrexham			
Drawing Title: **Drainage Layout**			
Date: 29 / 2 / 2024	Scale 1:1,250	Paper Size: A3 (420×297mm)	
Drawn By: RM	Checked By: KB	Status: FINAL	Final Revision: b
Drawing Ref: CE-MR-1798-DW02	Drawing No: **Drawing 2b**		