

**ENVIRONMENTAL PERMIT VARIATION APPLICATION
SUPPORTING STATEMENT**

**NATURAL UK LTD HEALTHCARE MANAGEMENT FACILITY,
UNIT 3,
CAPEL HENDRE INDUSTRIAL ESTATE,
CAPEL HENDRE,
AMMANFORD,
CARMARTHENSHIRE,
SA18 3SJ**

**Document Reference: NU1000/05.R2
October 2021**

**Project Quality Assurance
Information Sheet**

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INDUSTRIAL ESTATE, AMMANFORD, CARMARTHENSHIRE, SA18 3SJ**


Report Status : Final

Report Reference : NU1000/05.R2

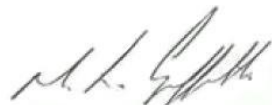
Report Date : October 2021

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Revision	Date	Amendment Details	Author	Reviewer
1	April 2022	Further detail provided on existing processes.	R Chapple	M Griffiths
2	June 2022	Detail added for the point source emission to air for the new proposed treatment plant.	R Chapple	D Thomas

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1.0 INTRODUCTION

1.1 Scope

- 1.1.1 Sirius Environmental Limited (Sirius) have been commissioned by Natural UK Limited to assist with the preparation of an application to vary the Environmental Permit EPR/DB3231RX currently held for Natural UK Ltd.'s Healthcare Management Facility. This Supporting Statement provides details in relation to the proposed changes to the existing facility. Supporting drawings and relevant appendices in support of this variation are included with this application.

1.2 Background

- 1.2.1 Natural UK Limited's Healthcare Management Facility is located off Heol Cwper (B4297) in Capel Hendre, Ammanford, SA18 3SJ (National Grid Reference: SN 59321 11017). The site first received its Environmental Permit (EPR/DB3231RX) in November 2011. Since then, three permit variations were determined by Natural Resources Wales (NRW), the last being in September 2013. The site's permit is for a clinical waste transfer station with treatment and authorises the receipt of clinical and healthcare waste for storage, treatment and repackaging at the site, followed by onward transfer to appropriately permitted facilities. Waste inputs may consist of source-segregated non-hazardous and hazardous clinical and healthcare wastes.
- 1.2.2 Treatment operations are currently limited to manual and/or mechanical sorting, separation, washing, screening, bailing, shredding, crushing, compaction and pelletisation of permitted wastes for the purposes of recovery or disposal. Mechanical treatment may include the use of bespoke equipment to wash and shred waste to aid physical separation and recovery. The activities are carried out within a building with an impermeable surface with a sealed drainage system which discharges to foul sewer via a trade effluent discharge consent with the Statutory Undertaker. The permit does not allow any point source emissions into surface waters or groundwater except clean surface water from roofs or from areas of the site that are not being used in connection with storing and/or treating waste. There are no monitoring or reporting requirements at the site.

1.3 Proposed Variation Application Overview

- 1.3.1 Natural UK Limited now wish to vary the Environmental Permit for their Healthcare Management Facility. The operator seeks to add a waste sterilisation process to treat infectious clinical waste (waste codes 18 01 03* and 18 02 02*), as well as non-hazardous Absorbent Hygiene Products (AHP) (waste code 20 01 99). These waste codes are already included in the site's list of permitted wastes.
- 1.3.2 The proposed waste treatment process will utilize an established technology, which will comprise of a relatively compact, self-contained unit which will have a maximum capacity throughput of 5 tonnes per day (approximately 5 bins per hour) if running constantly 24/7. The plant will be situated in a pre-existing enclosed building within the current Environmental Permit Boundary.
- 1.3.3 The clinical waste will be brought to site in rigid containers and weighed electronically. The containers will be lifted mechanically, and the contents will be tipped into a sealed loading hopper where it will be shredded. The shredded waste will be disinfected via heat treatment which will be achieved by either microwave and / or heat sterilisation. The treatment process will be fully contained, with the disinfected output materials being discharged into storage

containers pending recovery by separate recycling processes or use as a Solid Recovery Fuel (SRF), allowing the production of energy from waste.

- 1.3.4 The condensed liquid that results from the dampening of waste will be collected and fed back into the system, therefore, there will be no effluent to discharge. The air from the hoppers will be cleansed prior to release to the atmosphere via Hepa Filters. **The appropriate measures and monitoring of this point source emission to air is outlined in Section 2.6.**
- 1.3.5 Natural Resources Wales' Clinical Waste (EPR5.07) Guidance (Version 2, September 2014)¹, states that for infectious waste, in the USA, the State and Territorial Association on Alternate Treatment Technologies (STAATT) has provided four levels to define the microbial inactivation required for clinical waste treatment. Natural Resources Wales has adapted these principles to provide procedures to establish if the numbers or activity of pathogens has been reduced so that no additional precautions are needed to protect workers or the public against infection by the waste. For infectious waste, Level III must be achieved. This requires inactivation of vegetative bacteria, fungi, lipophilic/hydrophilic viruses, parasites and mycobacteria at a 6 log₁₀ reduction or greater; and inactivation of *B. stearothermophilus* or *B. atrophaeus* spores at a 4 log₁₀ reduction or greater.
- 1.3.6 The sterilisation process that is proposed to be added to the site will achieve STAATT Level III disinfection of infectious clinical waste.
- 1.3.7 Additionally, the operator would like to add EWC waste code 19 08 01 (sewage screenings) to the list of permitted wastes. This waste will undergo treatment at the existing non-hazardous treatment plant at the site, currently used for absorbent hygiene products (AHP's), such as nappies. The screenings will be delivered to the site in an enclosed skip and will be stored within the skip internally. The waste will be unloaded from the skip via a loading shovel / grab inside the building. This waste will then be loaded onto the conveyor, shredded to <40mm and washed in a friction washer. Following this, the waste will be squeeze dried in a compaction screw. The washing process will be repeated 3 times and the waste will be chlorinated. The output material will then be fiberized in a granulator and milled to form fibre pellets. The resulting pellets will be placed into a sealed container for transfer off site to an appropriate facility. It should be noted that the storage, treatment, loading and unloading of this waste will be carried out within the building on site on an impermeable surface with a sealed drainage system. Despite the addition of this waste code, it is not proposed to alter the current permitted waste tonnages for storage or treatment.
- 1.3.8 As part of this variation, the current permit boundary is proposed to be extended to include the area currently owned by the operator and situated adjacent to the north-east of the current permit boundary. This is shown in **Drawing No. NU1000/06/02**. In support of this, a Site Condition Report has been prepared and is included in this application at **Appendix 1**.
- 1.3.9 Natural Resources Wales (NRW) have confirmed during Enhanced Pre-Application Advice discussions that this application would fall under a 'Normal' variation as the installation capacity falls below 10 tonnes per day for the treatment of hazardous waste. The application fee of £10,792 has been agreed upon.

¹ Natural Resources Wales (2014) *How to comply with your environmental permit, additional guidance for: Clinical Waste (EPR 5.07) (Version 2 September 2014)*. [Accessed March 2021] [Clinical waste \(EPR 5.07\) \(naturalresourceswales.gov.uk\)](https://naturalresourceswales.gov.uk)

1.3.10 This application consists of the following:

- Application Forms and Fee
- Non-Technical Summary
- Supporting Statement
- Site Condition Report (**Appendix 1**)
- Fugitive Emissions Risk Assessment (**Appendix 3**)
- Accidents and Emergencies Risk Assessment (**Appendix 4**)
- Supporting Drawings

2.0 SITE DESCRIPTION

2.1 Site Setting

- 2.1.1 The site to which this application relates is Natural UK Limited's Healthcare Management Facility, located off the B4297, near Capel Hendre, Carmarthenshire. The site is largely surrounded by industrial, commercial and agricultural land. The National Grid Reference (NGR) on which the site is centred is SN 59321 11017. Overall, the site extends to approximately 0.42 hectares (ha) and is rectangular in shape.
- 2.1.2 Entrance to and exit from the site is undertaken from an un-named road within the Capel Hendre Industrial Estate off Heol Cwper (B4297) which runs c. 53m east of the site boundary. The site is secured by perimeter fencing (comprising steel wire mesh, steel palisade) and thick hedging which is frequently inspected and maintained for the prevention of unauthorised access. Access to the site is gained via two main vehicular gates on the eastern perimeter which are locked shut outside of operational hours. CCTV cameras at the site also provide security.
- 2.1.3 The geographical site location is depicted on **Drawing No. NU1000/06/01** and the current and proposed Environmental Permit boundaries are shown on drawing **NU1000/06/02**. The site is bounded to the north by Prostone Interiors Ltd and to the east by grass, trees and shrubs, with the B4297 situated beyond. To the south of the site is an un-named road within Capel Hendre Industrial Estate and Aalco metal suppliers lies beyond this. The land to the west of the permit boundary is owned by the operator and beyond this lies Universal Customs motor vehicle dealer and a local café.
- 2.1.4 The current permit boundary for the site is located approximately 320m south southeast from Capel Hendre village centre and 3.8km south west of Ammanford town centre.
- 2.1.5 There are a number of residential properties located on Hendre Road that lie approximately 190m to the north of the site. There are also residential properties along Heol Lotwen and Heol Cwper which lie c. 270m north west and 490m south-southeast respectively.
- 2.1.6 There are seven Sites of Special Scientific Interest (SSSI) (several of which are designated due to the presence of the rare Marsh Fritillary butterfly [*Euphydryas aurinia*]) situated within 2km of the site boundary:
- Caeau Capel Hendre – c. 587m N
 - Caeau Lotwen – c.780m NW
 - Caeau Blaenau-Mawr – c. 1.1km NNE
 - Cae Gwynfryn – c.1.1km W
 - Felin Fach Meadows, Cwmgwili – c.1.3km SW
 - Broad Oak & Thornhill Meadows – c.1.5 MW
 - Caeau Ffos Fach – c.1.8km NW
- 2.1.7 There is also a Special Area of Conservation (SAC) located within 2km of the site; Caeau Mynydd Mawr, which is notified as three component SSSIs:
- Caeau Lotwen – c.780m NW
 - Broad Oak & Thornhill Meadows – c.1.5km NW
 - Caeau Ffos Fach – c.1.8km NW

- 2.1.8 The Caeau Mynydd Mawr SAC covers approximately 25 ha and is designated due to its central position within a wider area that sustains one of Wales' most important populations of the Marsh Fritillary Butterfly (*Euphydryas aurinia*). Another contributing factor to its designation is the presence of valuable marshy grassland offering a mosaic of habitats including *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) and unimproved neutral grassland².
- 2.1.9 There are no Special Protected Areas (SPA), National Nature Reserves (NNR) or RAMSAR Sites within 2km of the site boundary. The site is not situated within an Air Quality Management Area (AQMA) or a Groundwater Source Protection Zone (SPZ).
- 2.1.10 According to NRW's National Flood Risk Map³, the site is within Community ID: 4567 and lies within the river basin district of Western Wales. The flood source would be surface water and small watercourses and there is considered to be low to medium risk.
- 2.1.11 The site overlies a Secondary A bedrock Aquifer which are defined as permeable layers capable of supporting water supplies at a local rather than strategic scale. Generally, these aquifers were formerly classified as minor aquifers. The bedrock geology underlying the site consists of South Wales Middle Coal Measures Formation.

2.2 Site Operation Summary

- 2.2.1 As is relevant to this application, Natural Resources Wales (NRW) have permitted the operation of a Clinical Water Transfer Station with Treatment. The facility may receive clinical and healthcare waste and the operator is permitted to store, treat, repackage and send these wastes for disposal or recovery. Waste inputs may consist of source-segregated non-hazardous and hazardous clinical and healthcare wastes.
- 2.2.2 The maximum quantity of waste to be accepted at the site shall not exceed 40,040 tonnes per annum. A maximum of 10 tonnes per day of hazardous waste can be received, treated or repackaged for disposal. No more than 50 tonnes of hazardous waste shall be stored at the site at any one time for recovery and / or disposal. Pre-treatment of waste for incineration or co-incineration shall not exceed 75 tonnes per day under the R3 and R5 activities. Pre-treatment of waste for incineration or co-incineration for disposal shall not exceed 50 tonnes per day under the D9 activity.
- 2.2.3 The permitted area consists of a series of linked steel portal framed buildings clad with sheet metal. The covered buildings are separated by steel clad walls into three main areas. The southernmost area contains warehouse storage for various Natural UK (non-waste) business activities. A small middle area contains the separate hazardous clinical waste transfer activities, and the largest northern area contains the non-hazardous absorbent hygiene product waste management activities. Each area has its own vehicle and pedestrian access doors. Attached to the southern area is a separate two floor annex building that contains offices for Natural UK's administration. External to the main buildings is a heavy goods vehicle weighbridge and portacabins for office and welfare use. The site has a general downward slope from the west to the

² Countryside Council for Wales (2008) *Core Management Plan Including Conservation Objectives for Caeau Mynydd Mawr Special Area of Conservation (SAC)* [Version 11, Aug 2012]

³ <https://maps.cyfoethnaturiolcymru.gov.uk> Natural Resources Wales (NRW) 'Flood Risk Assessment Wales Map'.

east. External areas are surfaced with a mixture of steel reinforced concrete, tarmac and limestone chippings hardstanding. All internal operational areas are surfaced with high strength, steel reinforced concrete (at a minimum thickness of 200mm) which is impermeable and capable of withstanding the weight of bulk waste vehicles, mobile plant and processing machinery. Both the internal and external surfaces have been constructed with materials suitable for the prevention of pollution to groundwater and surface water drainage.

- 2.2.4 All equipment and treatment processes are housed within a purpose-built building, with doors that only open to allow access and egress. This avoids the risk of fugitive emissions from the waste operations.

2.3 Waste Pre-Acceptance Procedures

Existing Permitted Waste

- 2.3.1 The existing pre-acceptance procedures (**Appendix 15**) will continue to be used for the proposed new treatment method. These have been produced in accordance with Guidance Document – Welsh Health Technical Memorandum (WHTM 07-01) “Safe Management of Healthcare Waste” and the Environment Agency’s guidance on “How to comply with your environmental permit Additional Guidance for: clinical Waste (EPR 5/07”. There will be no changes to these procedures as part of this application.

Proposed Additional Waste (19 08 01)

- 2.3.2 The proposed additional waste code, 19 08 01, is an absolute non-hazardous (AN) waste code which does not fall into the clinical or healthcare waste category. The existing waste pre-acceptance procedures (**Appendix 15**) will also apply to this waste code.

2.4 Waste Acceptance Procedures

Existing Permitted Waste

- 2.4.1 The existing pre-acceptance procedures (**Appendix 17**) will continue to be used for the proposed new treatment method. These have been produced in accordance with Guidance Document – Welsh Health Technical Memorandum (WHTM 07-01) “Safe Management of Healthcare Waste” and the Environment Agency’s guidance on “How to comply with your environmental permit Additional Guidance for: clinical Waste (EPR 5/07”. There will be no changes to these procedures as part of this application.

Proposed Additional Waste (19 08 01)

- 2.4.2 The proposed additional waste code, 19 08 01, is an absolute non-hazardous (AN) waste code which does not fall into the clinical or healthcare waste category. The existing waste acceptance procedures (**Appendix 16**) will also apply to this waste code.
- 2.4.3 This waste will be delivered to site in a skip and the waste provider (e.g. Welsh Water) will supply the required Duty of Care information. Visual inspections will be completed and the waste volume will also be recorded.
- 2.4.4 In the event the waste is deemed non-compliant or is not accepted at the site the delivery skip will be reloaded onto the delivery vehicle or, in the event the

vehicle has left the premises, the skip will be quarantined, and arrangements will be made for the skip to be collected and taken to an appropriate facility.

2.5 Waste Storage, Handling and Dispatch

2.5.1 The environmental management plans and risk assessments for waste delivery, storage, handling and dispatch at the site are outlined in **Section 3.0**, below.

Existing Permitted Waste

2.5.2 There will be no changes to the storage, handling and dispatch procedures for existing permitted waste types.

Proposed Additional Waste (19 08 01)

2.5.3 As previously outlined in **Section 1.3.7**, the proposed additional waste type, 19 08 01 – sewage screenings, will be delivered to site in a skip, within which it will also be stored internally.

2.5.4 Unloading will be via a loading shovel / grab and the waste will then be loaded onto a conveyor for treatment to commence.

2.5.5 Following treatment, the waste will be in the form of fibre pellets which will be placed in a sealed container and transferred to an appropriate facility. The resulting waste product will be subject to sampling and testing in accordance with existing procedures (**Appendix 18**).

2.5.6 It should be noted that the handling, treatment and dispatch procedures for this proposed waste type will be in line with that of the currently permitted absorbent hygiene products at the site (i.e. the Nappicycle treatment process).

2.6 Point Source Emission to Air

2.6.1 As aforementioned, the air from the hopper within the new treatment plant will be a point source emission at the site. In line with EPR 5.07 as clinical waste may contain pathogens, microbial emissions must be minimised and monitored. The new proposed treatment will comprise waste shredding which can generate bioaerosols. The appropriate measures to be implemented at the site to reduce the risk posed by this emission are outlined below. The location of this point source emission is at National Grid Reference (NGR): SN 59315 10999, as shown in **Drawing No.: NU1000/06/03**. The emission from the hopper will pass through HEPA filters and be released within the building.

Appropriate Measures

2.6.2 When in close contact with the new proposed treatment plant, staff will wear Personal Protective Equipment, such as masks to reduce the risk of infection or contamination of staff by the potential emission of pathogens.

2.6.3 The emissions of bioaerosols from the proposed treatment process will be monitored via spore tracers and the associated procedures provided in Annex 3 of EPR 5.07. The monitoring strategy is detailed in the section below.

2.6.4 High efficiency particulate air (HEPA) filters will be fitted at the point source emission to air associated with the initial waste shredding section of the plant in order to prevent bioaerosol emissions. The HEPA filters will be maintained to ensure a minimum particle removal efficiency of 99.97% for all particles of 0.3µm diameter. There will be procedures in place at the site to ensure the safe

removal and disposal of the HEPA filters. The treatment plant will be shut down when the HEPA filters are being removed and replaced to ensure there are no emissions during that time.

- 2.6.5 The plant will be designed and built to ensure microbiological aerosol containment. This will involve operation under negative pressure whereby air will be drawn away from the hopper entrance and passed through the HEPA filters. Additionally, the hopper will be equipped with doors on the opening to retain aerosols. While the shredder is operating, these doors will remain closed.

Monitoring Strategy

- 2.6.6 As the shredding of waste can release microbial aerosols potentially containing pathogenic organisms, monitoring is required to ensure the effectiveness of management controls. Owing to the possible variation of the types and numbers of microbes within a waste load determining the type to monitor for and the quantitative relevance is difficult. Therefore, it is proposed to use tracer spore suspensions, in line with Annex 3 of EPR 5.07.

- 2.6.7 Bacillus spores will be prepared and dispensed in a laboratory environment in either a dry form or within a liquid suspension in a number of sealed, small volume plastic containers. These will be dispersed throughout the waste load and processed, and will be referred to as a 'seeded' load.

- 2.6.8 Sampling will take place at the location of the point source emission prior to the processing of the seeded waste (control test), at intervals during the processing of the seeded batch (the intervals will relate to process stages and the timing of potential emission). Sampling will be conducted periodically thereafter for at least 2 hours after the cycle is complete. The aim of this monitoring strategy is to produce a quantitative 'estimate' of the total number of tracer organisms emitted from the device relative to the input dose by each route.

- 2.6.9 The monitoring will be conducted every 6 months during the commissioning period and will be carried out annually thereafter. There will be a single sampling point at the location of the point source emission.

- 2.6.10 **Table 1**, below, summarises the emission benchmarks for the point source emission monitoring.

Table 1: Emission Benchmarks for the Point Source Emission Monitoring

Emission	Measure	Colony Forming Units (Cfu)	Unit
Air – Sample point <10m from the treatment plant	Bacillus Spores	1000*	Per cubic metre

*These units relate to the overall monitoring period do the cfu benchmark applies to each individual sample of air or water taken, with a calculation made to report the result per cubic metre or litre. These are based on a seeding dose of 1×10^6 spores per gram of waste load, and would need to be adjusted if the seed dose were higher or lower.

- 2.6.11 This monitoring will enable the operator to establish the effectiveness of the appropriate measures in place, such as the containment of the shredding plant and the efficiency of the HEPA filters. In the event monitoring shows gradual changes in the effectiveness of the measures at the site, cognizance will be given to the improvement of procedures and an investigation will be conducted. Where sudden changes are observed, this would suggest the failure of a specific containment feature and investigation and repairs / replacements will be arranged as soon as possible.

3.0 OPERATIONAL VARIATION REQUIREMENTS

3.1 Risk Assessments and Management Plans

- 3.1.1 As is required by Natural Resource Wales (NRW) for varying an Environmental Permit, an assessment of risk to the environment as a result of the change in operation has been carried out. The proposed change relates to the addition of a waste treatment process to allow heat sterilisation of the already permitted waste codes 18 01 03*, 18 02 02* and 20 01 99. Additionally, it is proposed to add EWC code 19 08 01 to the list of permitted wastes for treatment at the existing non-hazardous treatment plant. The storage, treatment and bulking of the waste will be carried out within a pre-existing enclosed building on an impermeable surface with a sealed drainage system which discharges to foul sewer.
- 3.1.2 A Fugitive Emissions Risk Assessment and Accidents & Emergencies Risk Assessment have been conducted to account for the proposed operation in order to evaluate the potential risk posed human health and the environment. These are included in **Appendix 3** and **Appendix 4**, respectively. From these risk assessments, it can be concluded that the proposed changes do not cause increased environmental risk over and above that which has already been considered.
- 3.1.3 The following subheadings provide summaries of the Risk Assessments and Management Plans that are already in place for the site, and how the proposed amendment effects these established documents.

Existing Environmental Risk Assessment

- 3.1.4 An Environmental Risk Assessment has already been prepared for the current operations and the environmental impact of treating, processing and transferring healthcare waste including hazardous clinical waste and non-hazardous, non-infectious, segregated, offensive hygiene wastes has been assessed. Risks such as bioaerosols, dust emissions, litter, odour, noise and vibration, fire, vandalism, vermin and insect infestation, flooding and spillage were considered. The associated risks were considered low to moderate, however, with appropriate mitigation measures, all risks were reduced to a low rating.
- 3.1.5 Based on the specific Fugitive Emissions Risk Assessment for the proposed treatment activity, and the Environmental Risk Assessment for already established operations, the current Environmental Risk Assessment (**Appendix 5**) would remain appropriate for the variation specific and currently ongoing wider site operations.

Existing Odour Management Plan

- 3.1.6 The types of wastes accepted at the site have the capacity to create offensive odours. These malodours can increase with time as the wastes naturally degrade. Although there is no storage time stipulated in the Environmental Permit, good practice dictates that waste is processed and or transferred as soon as is practicable to reduce any accumulations. The processing and transfer of wastes is therefore based on identification of its type, age upon arrival, date of arrival and duration of storage to minimise the impact some wastes may have on the senses and lower the risk of offensive odour being emitted outside of the facility. Waste storage, transfer and processing activities

take place within the confines of the waste transfer and treatment buildings and waste is stored, where applicable, in sealed containers or bags.

- 3.1.7 Odours will be managed and assessed in accordance with the sites Odour Management Plan (**Appendix 6**). The plan incorporates routine in house checks and site inspections with findings recorded and reported where excessive to senior management for appropriate mitigating actions.
- 3.1.8 While the Odour Management Plan currently in place for the site remains valid, the following sections will be added to give cognizance to the proposed receipt, storage and treatment of infectious clinical waste (18 01 03* and 18 02 02*) and non-hazardous AHP's (20 01 99), as well as the addition of EWC code 19 08 01 for sewage screenings to the list of permitted wastes for treatment at the existing non-hazardous treatment plant.

Control Measures to minimise the risk of odour from infectious clinical waste storage and treatment

- Infectious clinical waste arriving on site should be contained within ridged, leak-proof containers. These containers will be unloaded from the delivery vehicle and placed within a covered storage bay. The storage duration will be kept to a minimum. The waste will be tipped from the sealed containers and loaded into the sterilization unit for treatment. The treatment will involve shredding, disinfection via heat treatment (involving either microwave or steam sterilisation) and finally bulking, baling and wrapping, ready for transfer off site to be used solid recovery fuel (SRF) in energy from waste applications. Owing to the baled waste being wrapped, post material sterilisation, within an enclosed building prior to loading and transfer offsite, it is unlikely that odour emissions will occur at this stage.
- Wastes are unloaded and treated within the appropriate enclosed building on an impermeable surface with a sealed drainage system.
- Access doors to buildings are to remain closed during processing / transfer operations and are only opened for access and egress when appropriate.
- Maxi thermal MT1500 ozonation devices are installed to combat odour and infection caused by bacteria, viruses, moulds, fungi and volatile organic compounds (VOCs) found in the air and on surfaces. These are active at all times during operational hours.
- Regular environmental checks will continue to be undertaken around the site (including operator "sniff" tests) as well as the weekly inspection which is documented.
- Incident procedures are in place in order to act upon any nuisance, accidents, complaints or non-conformances (i.e. a non-conformance or incident report)
- Floor surfaces, plant, equipment and storage containers will be cleaned and disinfected regularly. All wash waters will be contained within an impermeable surface to prevent run-off. Wash waters must be drained to foul sewer or disposed of appropriately.
- All containers are to be clearly and adequately labelled at all times so that the producer, waste source, waste contents and date of receipt can be readily identified. A tracking system will be in place to ensure that wastes can be identified prior to their onward dispatch. This will ensure waste is kept within the designated area for the shortest amount of time possible, thereby minimising the risk of odour.

Control Measures to minimise the risk of odour from the storage and treatment of EWC Code 19 08 01 – Sewage screenings

- Sewage screenings arriving on site will be contained within enclosed skips which are leak-proof. These skips will be unloaded from the delivery vehicle internally and placed within the existing storage area for non-hazardous waste (area G in **Drawing No. NU1000/06/03**). The storage duration will be kept to a minimum. The waste will be transferred from the skips to the treatment plant via a loading shovel / grab within the building. Waste will be loaded onto the conveyor, shredded to <40mm, washed in a friction washer and squeeze dried in a compaction screw. The washing process will be completed 3 times and the waste will be chlorinated. The output material will then be fiberized in a granulator and milled to create fibre pellets. Due to the level of washing and pelletisation of the waste, it is unlikely that odour emissions will occur at this stage. Post-treatment, the waste will be placed in sealed containers and loaded onto vehicles internally for off-site transfer.
- Wastes are unloaded and treated within the appropriate enclosed building on an impermeable surface with a sealed drainage system.
- Access doors to buildings are to remain closed during processing / transfer operations and are only opened for access and egress when appropriate.
- Maxi thermal MT1500 ozonation devices are installed to combat odour and infection caused by bacteria, viruses, moulds, fungi and volatile organic compounds (VOCs) found in the air and on surfaces. These are active at all times during operational hours.
- Regular environmental checks will continue to be undertaken around the site (including operator “sniff” tests) as well as the weekly inspection which is documented.
- Incident procedures are in place in order to act upon any nuisance, accidents, complaints or non-conformances (i.e. a non-conformance or incident report)
- Floor surfaces, plant, equipment and storage containers will be cleaned and disinfected regularly. All wash waters will be contained within an impermeable surface to prevent run-off. Wash waters must be drained to foul sewer or disposed of appropriately.
- All containers are to be clearly and adequately labelled at all times so that the producer, waste source, waste contents and date of receipt can be readily identified. A tracking system will be in place to ensure that wastes can be identified prior to their onward dispatch. This will ensure waste is kept within the designated area for the shortest amount of time possible, thereby minimising the risk of odour.

Existing Litter Management Plan

- 3.1.9 The site is within 2km of SAC and SSSI sites (as listed in **Section 2.1**).
- 3.1.10 The main potential for generation of litter is in the loading and unloading of materials and wastes. To mitigate and reduce these risks, unloading and loading is carried out as far as is practicable within the confines of the waste facility buildings. Additionally, waste will arrive at the site within sealed containers / enclosed skips, and waste will also leave the site within the same receptacles or it will be baled and wrapped, which will provide a high level of containment.
- 3.1.11 Litter will be managed and assessed in accordance with the site’s Litter Management Plan. The plan incorporates routine in-house checks and site

inspections with findings recorded and reported where excessive to senior management for appropriate mitigating actions.

- 3.1.12 Once the Environmental Permit Variation Application has been determined, the current Litter Management Plan (**Appendix 7**) and its associated application is considered appropriate to the new treatment process at the site. (Changes will not be required to this pre-existing document as the assessed risk of litter and mitigation strategies put forward remain accurate and sufficient.

Existing Spillage Management Plan

- 3.1.13 There are three main potential risks for spillage from the overall operations. These are from the storage and use of chemicals, oils and detergents used on site; from the use of process liquids in the Nappicycle treatment process and the resulting effluent and leakage of oils from vehicles, mobile plant and equipment. To mitigate and reduce these risks, all storage tanks and containers are bunded in accordance with good practice guidance documents e.g. Guidance for Pollution Prevention (GPP 2 & GPP 26). In addition, all fixed and mobile plant and vehicles operate on sealed concrete hardstand areas.
- 3.1.14 Leaks and spillages will be managed and assessed in accordance with the site's Spillage Management Plan. The plan incorporates routine in-house checks, maintenance and site inspections, with leaks or potential leaks reported immediately to senior management for appropriate mitigating actions.
- 3.1.15 The proposed permit variation would not require the alteration of the site wide Spillage Management Plan (**Appendix 8**) as the potential risks presented by the new treatment process put forward in this Environmental Permit Variation Application are covered in the current plan. The proposed sterilisation unit will be kept within an enclosed building and will operate on impermeable concrete with a sealed drainage system. Furthermore, the proposed additional waste code 19 08 01 for sewage screenings will be treated within the existing non-hazardous treatment plant within an enclosed building upon an impermeable surface with a sealed drainage system. The treatment process for sewage screenings will be the same as the process currently undertaken for non-hazardous waste such as absorbent hygiene products (e.g. nappies) and therefore the risk of spillages occurring and the resulting mitigation measures have already been considered in the existing Spillage Management Plan.

Existing Dust Management Plan

- 3.1.16 The main potential risk for dust emissions is from the Nappicycle treatment process. Specifically, where wastes materials are being dried, granulated and pelletised. To mitigate and reduce the generation of airborne dust into the environment, materials being processed are contained, as far as is practicable, within the processing plant and equipment. Any subsequent emissions are controlled through the use of cyclones, filters and dust extraction equipment.
- 3.1.17 The potential for dust arisings is managed and assessed in accordance with the site's Dust Management Plan. The plan incorporates routine in house checks and site inspections with findings recorded and reported where excessive to senior management for appropriate mitigating actions.
- 3.1.18 The proposed additional waste treatment process will pose a similar risk to other operations currently undertaken at the site and, therefore, the current Dust Management Plan (**Appendix 9**) will remain valid and appropriate in its application. The proposed treatment process for 18 01 03*, 18 02 02* and 20

01 99 will take place within an enclosed building which will significantly reduce the risk of fugitive dust emissions to the wider environment. The points at which the potential risk of dust emissions are greatest during the proposed treatment process are when waste is loaded into and unloaded from the treatment unit. Both of these stages occur within an enclosed building, as aforementioned. Furthermore, most units for this type of treatment comprise automatic air extractors which activate when the loading hopper door opens to prevent contaminated dust from escaping from the unit.

- 3.1.19 The proposed additional waste code for sewage screenings, 19 08 01, will be treated in the same location and in the same way as the Nappicycle treatment process. Therefore, the risks associated with this treatment process, particularly for the granulation and pelletisation of wastes, in terms of potential dust emissions and the mitigation measures to be taken have already been considered within the existing Dust Management Plan.

Existing Bioaerosol Management Plan

- 3.1.20 Emissions of bioaerosols can be generated where liquids or wet materials containing microorganisms are agitated or sprayed. Micro droplets of water that may potentially contain harmful microorganisms can become airborne (aerosolised). If these aerosols subsequently escape into the surrounding air, they may travel away from the source carried by the surrounding air currents. Gravity acts on these aerosols, which then settle on surfaces nearby. The concentration of aerosols reduces the further away from the source of its generation. For operators, the risk is that aerosols containing harmful microorganisms (bioaerosols) land on them or are inhaled. This risk increases with proximity to a source of aerosolisation. There are a number of activities and operations where there is a risk of generating aerosols: shredding and washing of AHP wastes in the Nappicycle process; the washing and cleaning of equipment and containers using high pressure water and steam washers and the washing and cleaning of reusable feminine hygiene waste containers
- 3.1.21 The risks associated with the transmission of infection or disease by bioaerosols is managed and assessed in accordance with the site's existing Bioaerosol Management Plan. The plan incorporates control measures and routine checks and site with findings recorded and reported and where excessive to senior management for appropriate mitigating actions.
- 3.1.22 The proposed additional waste code 19 08 01 for sewage screenings will be treated in the same location and via the same method as the AHP wastes in the Nappicycle process. Therefore, the associated risks and mitigation measures have already been considered in the existing Bioaerosol Management Plan (**Appendix 10**).
- 3.1.23 The proposed treatment process for infectious clinical waste (waste codes 18 01 03* and 18 02 02*) and non-hazardous AHP (20 01 99) will likely pose a lower risk than other operations on site with regard to bioaerosol emissions. As outlined above, one of the greatest risks for producing potential bioaerosol emissions are derived from the shredding and washing of AHP wastes. However, the proposed treatment process will not involve washing the wastes and instead, the material will be disinfected via heat treatment. The output material of such treatment processes is free of water and toxic chemicals and there will be no agitation or spraying of liquids or wet materials which may result in bioaerosol emissions. Therefore, it is considered that the current Bioaerosol Management Plan will provide a conservative risk assessment and mitigation strategy for the additional treatment proposed as part of this Environmental

Permit Variation Application. The cleaning of input and output containers via high pressure water and steam will be in line with washing activities already undertaken at the site and, therefore, cognizance has been given to these activities in the existing Bioaerosol Management Plan.

Existing Noise and Vibration Management Plan

- 3.1.24 Any noise and vibration emanating from the operation should be minimised to reduce noise pollution to the environment as much as possible. The main potential source of excessive noise is from the waste processing equipment, delivery vehicles and mobile plant. The risk of excessive vibration is not deemed significant but will be investigated should procedures change and the perceived risk increase.
- 3.1.25 All plant and equipment operate within an enclosed building and will be acoustically insulated where required to reduce excessive noise transfer.
- 3.1.26 Noise and Vibration emissions will be assessed and managed in accordance with the site's Noise & Vibration Management Plan. The plan incorporates routine in house and external checks (where required) and site inspections with findings recorded and reported to senior management for appropriate mitigating actions.
- 3.1.27 The proposed addition of a waste treatment method for infectious clinical waste (waste codes 18 01 03* and 18 02 02*) and non-hazardous AHP (20 01 99) will pose a similar risk of noise and vibration pollution as other pre-existing activities on site and the same management strategies will be implemented to minimise this, such as keeping and operating plant and equipment within an enclosed building which is acoustically insulated as appropriate. Furthermore, the proposed additional EWC code 19 08 01 for sewage screenings will undergo treatment in the existing non-hazardous treatment plant for AHP's. This treatment process has already been assessed in terms of noise and vibration and mitigation measures. Therefore, no changes to the Noise and Vibration Management Plan (**Appendix 11**) are required or proposed as a result of this Variation Application.

Existing Vermin and Insect Management Plan

- 3.1.28 The attraction of vermin and insects is considered a risk within waste facilities and needs to be addressed to minimise said risk of nuisance and or annoyance to human health and the wider natural environment. To reduce the risks, good housekeeping is considered an essential first step; this includes waste storage time prior to being transferred or treated being kept to a minimum, containers being kept closed and surface areas, plant and equipment regularly cleaned down and disinfected.
- 3.1.29 Control of vermin and insects has been assessed and managed in accordance with the site's Vermin & Insect Management Plan. The plan incorporates routine in-house checks and site inspections, including regular external pest control visits with findings recorded and reported to senior management for appropriate mitigating actions.
- 3.1.30 The risks of vermin and insects on site and the corresponding mitigation strategies will remain appropriate and effective following the addition of the proposed treatment process for infectious clinical waste and additional EWC code 19 08 02 for sewage screenings to be treated in the existing non-hazardous treatment plant. Resultantly, there are no proposed changes to the

Vermin and Insect Management Plan (**Appendix 12**) currently in place, and it will remain appropriate for use across the site going forward.

Existing Fire Management Plan

- 3.1.31 A fire on-site poses the risk of off-site emissions, including smoke, dust and contaminated water used to douse the fire.
- 3.1.32 All available precautions will be taken to ensure the risk of fire is minimized in the first instance. The building itself is fabricated from steel and poses a low risk of combustibility. Security cameras are in place and smoke alarms are fitted throughout the buildings. There is a “No Smoking” policy on site apart from designated smoking areas. Buildings are kept locked when not in use, chemicals are segregated and stored in accordance with manufacturer’s recommendations, and fire extinguishing equipment is in place to tackle the outbreak of any small Class A fires.
- 3.1.33 The Site Drainage Plan will inform personnel and emergency services of surface water run off courses. On site personnel will be trained in the use of booms, pumps and drain covers to control any surface water run-off arising from a fire from entering storm water drainage and other water nearby water courses.
- 3.1.34 Pollution from a fire event will be managed and assessed in accordance with the site Fire Management Plan. The plan incorporates routine in house and external checks and site inspections with findings recorded and reported immediately to senior management for appropriate mitigating actions.
- 3.1.35 The current Fire Management Plan (**Appendix 13**) contains site-wide protocols to control the risks in relation to fire. These protocols will continue to be applied as appropriate; therefore, no changes are required as a result of this Environmental Permit Variation Application.

Existing Emergency Incident and Response Management Plan

- 3.1.36 The current Working/Management Plan, procedures and environmental plans all aim to reduce as far as practicable the risks to human health and the environment. In the event of a major incident e.g. a fire or major spillage, it is critical that operational staff are trained and prepared to minimize the risks of the incident and provide adequate emergency response.
- 3.1.37 The emergency and incident response plan sets out procedures to manage potential emergency situations and includes a list of contacts to provide additional support and assistance that can be called upon if required.
- 3.1.38 In addition to the additional treatment specific Accidents and Emergencies Risk Assessment included at **Appendix 4**, the current Emergency Incident and Response Management Plan (**Appendix 14**) will remain valid and practicable for both this and the wider site operations, following the addition of the proposed treatment process for infectious clinical waste, as well as the addition of EWC code 19 08 01 for sewage screenings which will be treated in the existing non-hazardous treatment plant.

4.0 CONCLUSIONS

- 4.1.1 Following a request by Natural UK Limited, after the granting of the Environmental Permit DPR/DP3231RX in November 2011 and subsequent variations in September 2013, this application seeks to vary the permit to add a further waste treatment activity at the site and a waste code (19 08 01), as well as extend the Environmental Permit boundary area. The tonnage of wastes to be received, treated and stored on site will not alter as part of this application.
- 4.1.2 Following on from review of the proposed amendments included in this variation application, and both additional operation specific and pre-existing Risk Assessments and Management Plans, it is considered that the changes to the operation are more than adequately covered in terms of operational controls to address any potential for human health or environmental emissions of concern.
- 4.1.3 This supporting statement and its associated drawings and appendices provides the required level of information to enable determination of the application to be made and the subsequent amendment to be issued.