Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales Permitting Decisions

Celsa Manufacturing (UK) Limited Tremorfa Melt Shop

Decision Document

Application for a Substantial Variation

The application number is: PAN-018725

The permit variation number is: EPR/TB3639BH/V010

The applicant / operator is: Celsa Manufacturing (UK) Limited

The Installation is located at: Tremorfa Melt Shop, Tremorfa Works, Seawall Road, Cardiff, CF24 5TH

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise, we have accepted the applicant's proposals.

Contents

Glossary of acronyms and definitions used in this document

AEL-Associated emission level

BAT- Best available techniques

BRef- BAT Reference document (waste treatment)

EAL-Environment assessment level

ELV-Emission limit value

EoLV-End of life vehicle

EMS-Environmental management system

FPMP-Fire prevention and mitigation plan

EPR-Environmental permitting regulation (England and Wales) (2016)

HRA- (OGN 200)- Habitats Regulatory Assessment

HOI- Hydrocarbon oil index

IED-Industrial emissions directive (2010)

NMP-Noise management plan

NOx- Oxides of nitrogen (NO,NO_2 and N_2O)

PC-Process contribution

PEC-Predicted environmental concentration

PM_{10}-Pariculate matter with a diameter pf ≤10 µm

$PM_{2.5}$-Parituclate matter with a diameter of ≤2.5 µm

SAC-Special Area of Conservation

SPA-Special Protection Area

SSSI-Site of Special Scientific Interest

SuDs- Sustainable drainage system

TOPAS- Turnkey Optical Particle Analysis Systems

1. Executive summary

1.1. Application summary

Celsa Manufacturing (UK) Limited have applied to vary their installation permit (EPR/TP3639BH) for Tremorfa Melt Shop, which includes the Rover Way site, to reflect the following proposed changes to the site. The proposed changes are as follows:

- The addition of a new shredder that will process more than 75 tonnes per day and falls under, Section 5.4 Part A(1) b iv of Schedule 1, Part 2 of the Environmental Permitting Regulations (EPR) 2016. As the shredder is a new part A1 installation activity above the threshold (75 tonnes per day), the application is considered to be a substantial variation.
- Addition of a new abatement plant (filter bag house) and a new 18 metre high stack for particulate matter generated from the shredder. This is proposed to be listed as a new emission point to air in the permit (as emission point A11).
- Installation of a new fixed scrap metal shear that will replace the currently permitted mobile plant. The new shear will also increase the maximum processing limit from 5000 tonnes per month to 7000 tonnes per month.
- Integration of Best Available Techniques (BAT) conclusions from the BAT reference document (BRef) for the Waste Treatment sector (2018).
- Integration of a new end of life vehicle depollution station. One was previously permitted for the site but was never used.
- Upgrade surfacing and roadways to hardstanding surfacing. Water run-off from the scrap yard to be discharged to sewer under a trade effluent consent.
- Movement of currently permitted slag handling equipment (listed in the permit as emission points A6-A10) 300 meters south of their current permitted location. The new location of the slag handling equipment will remain within the existing site boundary.
- Additional list of waste codes to be listed in the permit for the acceptance of waste into the shredder yard.
- Revisions to the site's management plan as a result of the changes

1.2. Our decision

We are minded to issue the variation for Tremorfa Meltshop operated by CELSA Manufacturing (UK) Limited

We consider in reaching the draft decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

2. Receipt of the application

The application was received on 21/07/2022 and was picked up for duly making on the 04/11/2022**.** In order for us to be able to consider the application duly made, we needed more information. We requested the following:

- More information to support the noise impact assessment report submitted by the applicant including justification for using older background sound levels from 2019
- More information on the dust management plan
- More information on fire water containment in the fire prevention and mitigation plan and
- More information on what test (if any) are proposed (outside the annual inspection) on the filter medium strip to check if aqua-Xchange is performing as expected.

In addition, the application was initially submitted as a normal variation. However, as the shredder that was being added to the permit was categorised as a new installation activity under the Environmental Permitting Regulations 2016 (Schedule 1 part 2 activity, Section 5.4 Part A(1) (b) (iv), we informed the applicant that the variation was deemed substantial. We made this decision in accordance with RGN 8: Substantial changes in operation at installations, mining waste facilities and other facilities involving solvent and combustion (cyfoethnaturiol.cymru).

The applicant also revised aspects of their proposal during the request for more information due to changes in planning. This included the removal of a proposed water discharge point S6 and a revised drainage scheme.

A letter requesting the further information was sent to the applicant on 09/07/2023. Upon receipt of this information, on 17/03/2023, we were able to consider the application duly made. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

3. Confidential information

The applicant made no claim for commercial confidentiality, and we have not received information in relation to the application that appears to be confidential in relation to any party.

4. Legislation

The variation is issued, under Regulation 20 of the EPR 2016. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the Industrial Emissions Directive (2010) (IED);
- subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which also have to be addressed.

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that the decision on this application is consistent with its general purpose of pursuing the sustainable management of natural resources (SMNR) in relation to Wales and applying the principles of SMNR. In particular, NRW acknowledges that it is a principle of sustainable management to take action to prevent significant damage to ecosystems. We consider that, issuing the variation a high level of protection will be delivered for the environment and human health through the operation of the Installation in accordance with the permit conditions. NRW is satisfied that this decision is compatible with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.

As the EPR regulator in Wales, NRW are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse the variation based upon an objective assessment of the proposals against the detailed legal requirements of EPR. Our public participation statement[1] gives more information on what can, and cannot, be taken into account when making our permitting decision.

[1] Natural Resources Wales / Public participation: how you can take part in our permit and licence consultations

The application, and this decision document, only considers the permitting of the facility under EPR as described throughout the document. We only assess the installation and its impacts and cannot take into consideration indirect impacts which are not as a direct result of activity within the installation boundary.

Any proposed development and wider associated activities will be required to be compliant with all relevant and applicable law, for example, environmental law, health and safety law, planning law. This other legislation acts largely independently of EPR (although they may be inter-related). Such other matters are beyond both the scope of this document, and of our regulatory remit and expertise and are not relevant to our EPR permitting decision. Ensuring compliance with all other regulation and obtaining any required consents (such as planning permission) is the responsibility of those undertaking the development and is regulated by the relevant appropriate authority for each.

5. Consultation

5.1. Consultation on the Application

We have carried out consultation on the application in accordance with the Environment Permitting Regulations (EPR), our statutory Public Participation Statement (PPS) and our Regulatory Guidance.

A copy of the application is available on the public register for anyone to view. We advertised the application to the public by a notice placed on our website directing people to the public register, advising them of how they could arrange for copies to be made if required and how they can provide comments.

We also consulted with the following bodies, which includes those with whom we have “Working Together Agreements”:

- Health and Safety Executive
- Public Health Wales
- Cardiff Council Planning Department
- Cardiff Council Environmental Health

- South Wales Fire and Rescue Service

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

The consultation started 21/03/2023 and ended on 21/04/2023.
A summary of consultation comments and our response to the representations we received can be found in Annex 3. We have taken all relevant representations into consideration in reaching our decision.

5.2. Draft Permit Consultation

We carried out consultation on our draft decision. The consultation began on 27/03/2024 and ended on 26/04/2024.

6. Requests for information

Further information was requested from the applicant during determination by way of Schedule 5 Notices. We sent the applicant three schedule 5 notices during the determination.

6.1 Schedule 5 request for more information

First Schedule 5 Notice

The first schedule 5 notice was sent to the applicant requesting further information relating to their air quality impact assessment. The initial modelling submitted had assessed against a level of 2 mg/m^3 rather than the BAT-AEL of 5 mg/m^3 which the applicant had proposed to use in the permit. The applicant was asked to either resubmit their air quality impact assessment at 5 mg/m^3 or confirm the use of 2mg/m^3 as an ELV. The Schedule 5 Notice was sent on 25/05/2023 with a deadline for response of 09/06/2023.

The applicant's response to the Schedule 5 Notice was provided on 30/05/2023 confirming that they will use the ELV of 5 mg/m^3 and sent in an amended air quality

modelling report at that level. The additional information supplied satisfied the requirements of the Schedule 5 Notice.

Second Schedule 5 Notice

The second schedule 5 notice was sent to the applicant requesting further information on the following:

- Risk assessment on the ground water discharge.
- Assessment on how the site will apply the best available techniques from the waste treatment BRef; and
- Noise impact assessment.

The Schedule 5 Notice was sent on 23/06/2023 with a deadline for response of 24/07/2023.

The applicant's response to the Schedule 5 Notice was provided on 24/07/2023.

Third schedule 5 Notice

The third schedule 5 notice was sent to the applicant requesting further information on the following:

- Fire prevention and mitigation plan
- Tin stockpiling management plan
- Dust management plan
- Noise management plan

The Schedule 5 Notice was sent on the 31/08/2023 with a response deadline of 22/09/2023. The additional information supplied satisfied the requirements of the Schedule 5 Notice.

Information requests were placed on our public register as were the responses when received.

6.2 Changes to the proposal

During the determination, the applicant revised their proposal so that all water runoff from the scrap yard is discharge to sewer under a trade effluent consent. The applicant provided their resubmitted application on 14th December 2023. All documents assessed and integrated into the permit were sent on or after that date.

Several informal information requests were also made via email. These related to the following:

Email 30/01/2024

- Additional information on BAT 23
- Details on how the wall designs meet the requirements of section 11 of our fire prevention and mitigation plan guidance
- Any potential noise from the new pumps

Email 05/04/2024

- Response to queries raised with the operator during review of the permit.

A copy of the information notices and e-mails requesting further information and the responses are available on the public register.

7. The Installation

7.1. The permitted activities

The regulated facility comprises an installation and waste operations. The installation comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations:

- **Primary activity**: Section 2.1, Part A(1)(b)(i) Producing steel using electric arc furnaces with a designed holding capacity of 7 tonnes or more
- Section 5.4 Part A(1) (b) (iii) Recovery or a mix of recovery and disposal of non-hazardous waste in an installation with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC – treatment of slags and ashes.
- Section 3.5 Part B (e) Coating road stone with tar or bitumen.
- **New activity:** Section 5.4 Part A(1)(b)(iv) 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 one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC—treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components

An installation may also comprise “directly associated activities”, which at this Installation include includes:

- Scrap handling and storage
- Other raw material handling
- Billet Storage
- Water Treatment Systems
- Scale handling
- Electric Arc Furnace Dust storage and handling
- Waste transfer station with treatment
- Integrated scrap metal recycling centre (incorporating oversize material processing, material processing via vibro-flume and material processing via Eddy Current Separation (ECS)
- Metal recycling site (mixed MRS) including end of life vehicle de-pollution station

The regulated facility also undertake waste operations including:

- **R13**: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)
- **R3**: Recycling/ reclamation of organic substances which are not used as solvents
- **R4**: Recycling/ reclamation of metals and metal compounds
- **R5**: Recycling/ reclamation of other inorganic compounds

Together, these listed and directly associated activities comprise the Installation.

7.2. Changes to the installation

The applicant has proposed to make the following changes to their Rover Way site:
New installation activity: Section 5.4 Part A(1)(b)(iv) of the Environmental Permitting Regulations (EPR) 2016 comprising a new shredder above the 75 tonnes per day threshold. As the new activity will operate above the threshold the variation is considered substantial. As a new installation activity, the site will also apply the relevant best available techniques (BAT) from the waste treatment BRef.

Associated activities

- **Slag handling** – equipment to move 300 meters south of current position. There are no other changes to the activity.
- **End of Life Vehicle (EoLV) depollution station**. The permit had already included a EoLV depollution station but this activity was never carried out. As part of the variation the applicant has integrated a new EoLV depollution station that will be compliant with BAT.
- **Metal Shear**: The site is already permitted for a mobile metal shear of up to 5000 tonnes per month. The variation will replace this with a new fixed plant metal shear and an increase to 7000 tonnes per month

In addition, the site will also have a new hardstanding concrete slab and sealed drainage, the details of which are explained later in this document (section 9.3).

The only part of the variation to the northern part of the site (the location of the melt shop) is the changes to the tin stockpiling management plan (which includes the maximum tonnages used in the summer months (6000 tonnes) and winter months (10000 tonnes).

8. Operation of the installation

8.1. Operator competence

The applicant is the sole operator of the Installation. We are satisfied that the applicant is the person who will have control over the operation of the Installation after the variation is issued; and that they will be able to operate the Installation so as to comply with the conditions included in the permit, if issued. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator[2].

The operator satisfies the criteria in RGN 5 on Operator Competence[3].

[2] RGN 1 Understanding the meaning of 'operator' (naturalresources.wales)
[3] regulatory-guidance-note-5-operator-competence.pdf (naturalresources.wales)

8.2. Environmental Management System

As part of the application, the applicant has provide an outline of their environment management system including amendments as a result of the changes to the site and how EMS will continue to meet the requirements in our “How to comply with your environmental permit” guidance[4] following the addition of the shredder.
The applicant’s EMS is certified to the requirements of ISO 14001. The applicant has provided a summary of their environment management systems. The documents are as follows

- Environmental Aspects
- Environment management system Manual
- Emergency Plan
- Waste Management
- EMERGENCY ACTION PLANS
- Celsa Manufacturing UK limited Environmental policy

The applicant has also provided evidence that their EMS will meet the requirements of BAT 1 of the waste treatment BRef, which is outlined in more detail in Annex 4 of this document.
We have reviewed the application and are satisfied that appropriate management systems and management structures will be in place for this Installation, and that sufficient resources are available to the Operator to ensure compliance with all the Permit conditions and BAT 1 of the waste treatment BRef.

Accident management

The EMS includes an Accident Management Plan (titled Emergency management plan ECP 34) which the applicant has submitted as part of this application. We have reviewed this and are satisfied that appropriate controls are in place to help reduce the occurrence and impact of any accidents that occur.

[4] Natural Resources Wales / Guidance to help you comply with your environmental permit

In order to ensure that the EMS sufficiently manages the residual risk of accidents, permit condition 1.1.1 requires the implementation of a written management system which addresses the pollution risks associated with, amongst other things, accidents.

Fire Prevention and Mitigation

The facility will be operated in accordance with an approved Fire Prevention and Mitigation Plan (FPMP) which has been submitted as part of this application. We have reviewed this and are satisfied that appropriate controls are in place to help reduce the occurrence of fires and impact should one occur.

We have assessed the applicant's FPMP against relevant criteria of our guidance Guidance No. 16 Fire prevention and mitigation plan - waste management (naturalresources.wales). We are satisfied that the applicant has a sufficient FPMP that would both minimise the likelihood of a fire and minimise impact to the environment in the event of a fire.

8.2. Operating techniques

Installation activities and assessment of Best Available Techniques

The applicant has described the proposed equipment and operating techniques and compared these against the relevant guidance notes / Best Available Techniques Conclusions (BATC) which in the case of this variation is the Waste Treatment BRef published 10th August 2018.

The applicant has supplied a summary of how they will achieve the BAT conclusions which is supported by their safe working procedures, management plans and environmental management systems. A summary of how the site will achieve the relevant BATc is outlined in Annex 4 of this document.

The applicant has also supplied management plans for the minimisation and mitigation of impacts from noise, pests and dust. These are summaries in more detail the relevant sections of this document.

We have reviewed the techniques proposed and consider them to represent BAT at this installation.
We have specified that the applicant must operate the permit in accordance with the descriptions in the application. These techniques are integrated into the permit through the operating techniques table (Table S1.2).

Efficient use of raw materials, water and energy

Having considered the information submitted in the application, we are satisfied that the applicant will ensure that raw materials, energy and water are used as efficiently as possible.
The only water use associated with the processes subject to this variation for the damping of dust generated in the shredder which is emitted as steam to air. All water discharged to sewer is comprised of contaminated rainwater run off from the shredder yard.
The applicant will report on energy and electrical consumption as already required in their environmental permit for the melt shop site as a whole.

The efficient use of raw materials energy and water has also been assessed as part of the applicants compliance with the Waste Treatment BRef (see Annex 4).

The operator will be required to report energy usage under condition 4.2 and Schedule 4 of the permit. The following parameters are existing requirements of the permit and have not changed as a result of the variation:

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Energy usage	Annually	MWh
Electrical energy consumption	Annually	KWh
Water consumption	Annually	M^3
Particulates generated	Annually	kg

This will enable us to monitor energy efficiency at the Installation.

Avoidance, recovery or disposal of wastes produced by the activities

The shredder, shear and associated activities (including end of life vehicles (EoLV) depollution) will produce waste through the sorting, depollution and treatment of the waste that is accepted onto the site. The ferrous and non ferrous metals will be subject to treatment using the shredder and will be sorted into the relevant piles. The processed scrap is sent to the melt shop for use in the electric arc furnace or other processes. The mixed non ferrous metals (referred to as zorba) and other wastes are sent off site for further recovery and/or disposal. The applicant has also outlined how they will deal with generation of waste through their management plan (waste management ECP14) and in the main variation application report.

Having considered the information submitted in the application, we are satisfied that the waste hierarchy referred to in Article 4 of the Waste Framework Directive will be applied to the generation of waste and that any waste generated will be treated in accordance with this Article.

We are also satisfied that the this meets the requirements of BAT 1 XII.

We are satisfied that waste from the regulated facility that cannot be recovered will be disposed of offsite using a method that minimises any impact on the environment. Permit condition 1.4.1 of the permit will ensure that this position is maintained.

9. The site

The variation will not add new land. However the variation will make changes to site's layout, in particular the southern part of the site, located south of Rover Way. These changes include:

- A new point source emission to air (A11) of particulate matter from the shredder (equipped with bag filter plant)
- Change in location of one of the sewer discharge points (S5).
- Change in layout of site drainage and internal roadways
- Movement of the slag handling equipment (emission points A6-A10) 300 meters south of their current permitted position

There are no changes to the areas that encompass the asphalt plant or the melt shop (north of Rover Way).

9.1. Site Plan

The applicant has provided an updated plan which we consider is satisfactory, showing the extent of the site of the facility with both the existing and the new emission points.
The update site plans (site Plans 1 and 2) are included in the permit and the operator is required to carry on the permitted activities within the site boundary.
We have also removed site Plan 3 that was in the previous permit (V009) as this no longer reflect the site layout as a result of the variation. The plan for the asphalt plant which was Plan 4 in V009, has been renumbered to Plan 3 for V010.

9.2. Site Condition Report

The proposal does not include the addition of any land or the removal of land from the site and as such a Site Condition Report was not required to support this application.

9.3. Drainage strategy

As part of the variation to add the new shredder the applicant has proposed to include a new hardstanding surfacing with sealed drainage system.

The new surfacing will cover the area where the shredder, metal shear, the storage and processing of scrap wastes including the end-of-life vehicle depollution station are to be located.

As a waste site, any rain water runoff that comes in contact with waste piles or areas of waste processing is considered contaminated process water and will have to be discharged to sewer under the terms of a trade effluent consent[5]. As such the applicant has devised a drainage strategy to ensure that all water run off from these areas is collected for discharge to sewer (under a trade effluent consent).

[5] WRAP Cymru Sustainable Drainage Systems (SuDS) Advisory Note date June 2022 SuDS Advisory Note ENGLISH Final.pdf (wrapcymru.org.uk)

The proposed area where the shredder is to be located is to have two drainage catchments. One located in the northern portion of the shredder yard and one in the southern portion. These areas are highlighted in the drainage plan submitted by the applicant shown in figure 1 below.

The slab is designed so that water run off will flow towards and enter the filter strip

The water runoff will then go through the filter strip before being collect in a pipe located at the bottom of the filter strip and pumped to onsite tanks and then discharged to sewer under a trade effluent consent. The design of the filter strips (north and south) are shown in figure 2.

We are satisfied that the design constitutes a sealed drainage system and that any contaminated water runoff is treated and then sent to sewer under a trade effluent consent, (for further treatment at Dŵr Cymru Welsh Water's wastewater treatment works).

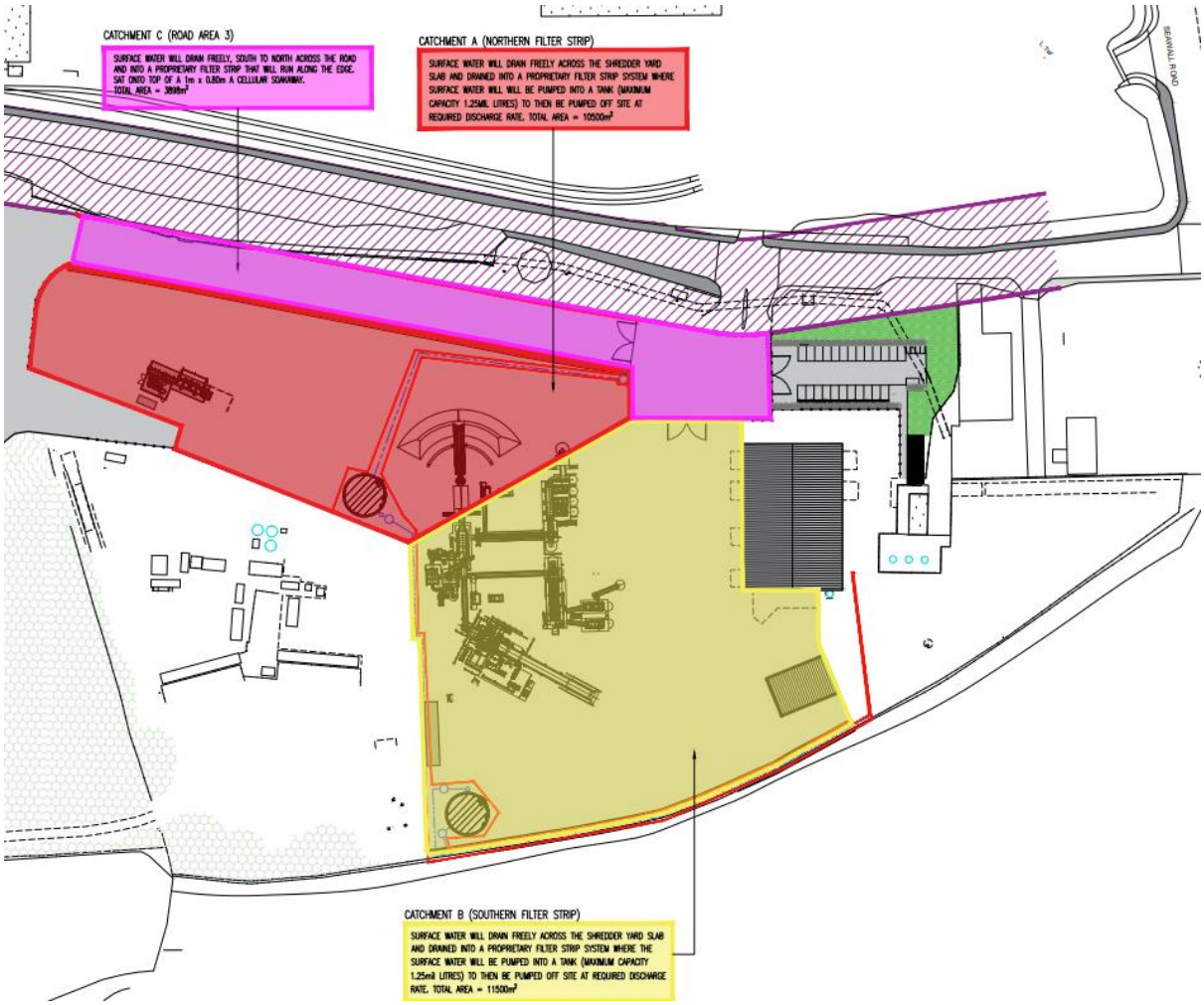
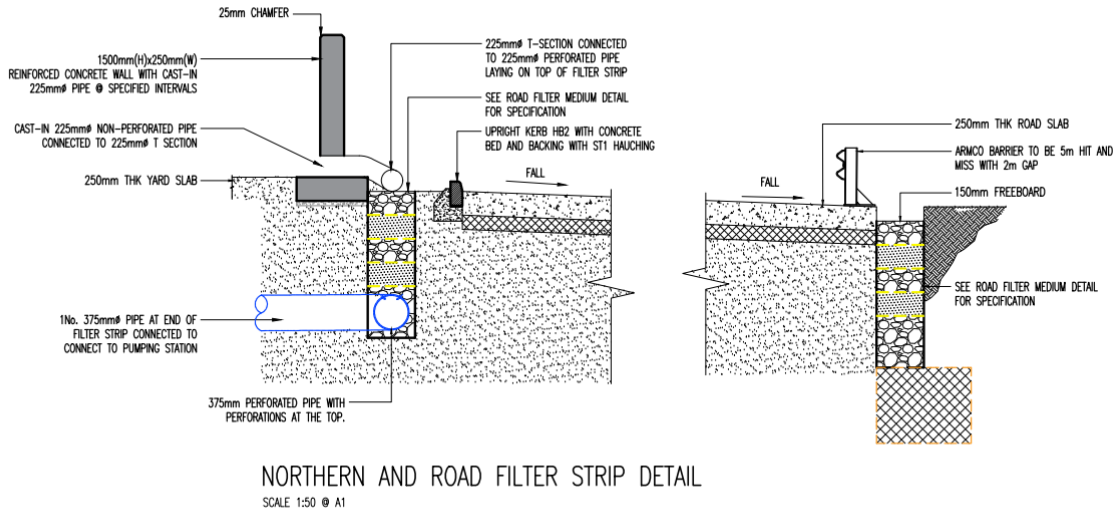


Figure 1: Site Drainage plan showing the different catchments areas of the shredder yard and the internal road systems

All water runoff from the internal roadways and car park are segregated from areas where waste is stored and processed. As such water runoff from the roadways will consist only of uncontaminated surface runoff. Water run off from these areas will discharge to ground through a soakaway (with appropriate filtration in place).



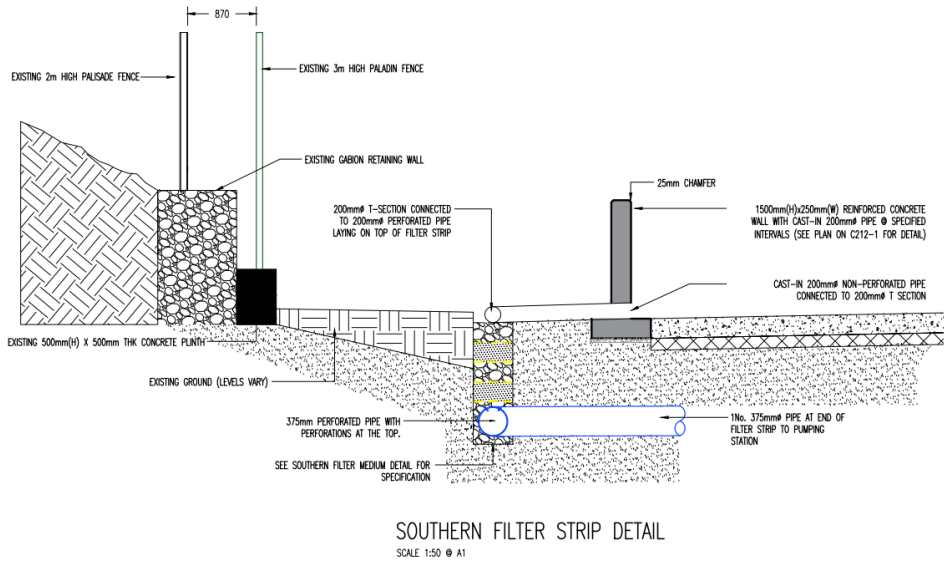


Figure 2 design of the filter strip among the north seciton of the shreddar yard (above) and the southern section (below)

The two filter strips can be isolated from the shredder yard in the event of a fire through the use of penstock values. The values would take approximately 5 minutes to close. The closure of the penstock valves ensures that no contaminated fire water will enter surface water, ground water or sewer in the event of a fire.

We are satisfied that the new sealed drainage system is adequate to contain and prevent contaminated water runoff from entering ground or surface water. We are also satisfied that the sealed drainage system meets the requirements of BAT 19 and BAT 20 (see Annex 4) of the Waste Treatment BRef.

9.4. Site protection: potentially polluting substances and prevention measures

The operator has a duty to ensure that soil and groundwater are protected in order to meet the requirements of Articles 14 (1)(b), 14(1)(e) and 16(2) of the IED.

The proposed changes to the site include a new hardstanding surfacing and sealed drainage (see section 9.3) that will replace the previously permitted layout that had a hard but unsurfaced land. The new arrangement will ensure that no potentially polluting substance will enter soil or groundwater.

All hazardous liquids (which include oils, waste fuel, engine oils) will be stored in bunded areas that provide secondary containment.

The applicant has not proposed to use secondary containment for the tanks used to store the water runoff from the site prior to its discharge to sewer. They have stated the following reasons:

- The site has an impermeable surface and can be isolated from the drainage using penstock values as per their fire prevention and mitigation plan.
- The tanks store treated rainwater runoff from the scrap yard which has already been subject to treatment. Therefore, the pollution potential is low.
- The tanks are located on impermeable surface that is bunded by the wall and penstock.

The drainage system is designed in a way that in the event of leak occurring any discharge would flow towards the drainage/pipe network used for collection of contaminated rain water for discharge to sewer (see figure 2 section 9.3). We are satisfied that the design of the site layout would contain any discharge within the shredder yard and prevent pollution outside the shredder yard.

In the event of a fire, the penstock vales can be close. This would seal the shredder yard off from the drainage system and would prevent contaminated fire water from entering surface, sewer or ground water. The fire prevention and mitigation plan highlights that the area can hold a minimum of 900 m^3 of water (enough for the fire service to put out the largest waste pile in 3 hours). The contaminated fire water would be tankered off-site for treatment. We are satisfied that the design meet our guidance Guidance No. 16 Fire prevention and mitigation plan - waste management (naturalresources.wales).

Based upon the information in the application we are satisfied appropriate measures will be in place to protect the site and its surroundings from polluting substances.

10.Environmental Risk Assessment

Regulated activities can present different types of risk to the environment. These include odour, noise and vibration; accidents, fugitive emissions to air and water; as well as point source releases to air, water, sewer and discharges to ground or groundwater, global warming potential and generation of waste. All these factors have been considered during our determination and the relevant risks from this proposal are discussed in this and other sections of this document.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of emissions from the regulated facility on human health and the environment and what measures we are requiring ensuring a high level of protection.

In line with our guidance, the applicant has provided an environmental risk assessment with the application which identifies and the sources of key risks from the installation /

waste operations, possible pathways and receptors. This risk assessment and further assessments provided by the applicant in further detail below.

10.1. Assessment of impact on air quality

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the new stack and its impact on local air quality.

The applicant has assessed the new shredder's potential emissions to air against the relevant air quality standards, and the potential impact upon human health in line with relevant guidance[6]. This assessment predicts the potential effects on local air quality from the stack emission from the shredder.

The air impact assessment and the dispersion modelling has been based on the Installation operating continuously at the relevant long-term or short-term emission limit values, i.e., the maximum permitted emission rate.

We are in agreement with this approach. The assumptions underpinning the model have been checked and are reasonably precautionary. The way in which the applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed by Natural Resources Wales modelling specialists to establish the robustness of the applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts.

The main changes to the site from the proposal that will affect the impacts of channelled (point source) air emissions are as follows:

- Addition of new air emission point A11: 18 metre stack from the shredder that will emit particulate matter.
- Movement of slag handling equipment (with associated emission points A6-A10) 300 meters south of their current location. This would result in these emission points being located closer to the Seven estuary (SAC, SPA and Ramsar) site.

[6] Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)

10.1.1 Movement of slag handling equipment (emission points A6 to A10)

The slag handling activity was added to the permit in the previous variation (V009). The emissions from the equipment primarily consisted of emissions from combustion oxides of nitrogen and carbon monoxide. During the determination of that variation (V009) it was found that all emissions from the equipment screened out as insignificant at the emission source. For more details, please refer to the decision document for V009 (EPR/ TP3639BH/V009 Decision document)[7].

As the emissions from the slag handling equipment screened out at the emission source the movement will not lead to any significant impact for human or habitat receptors.

10.1.2 Emissions of particulate matter from the shredder (emission point A11)

The new shredder will result in emissions of dust (particulate matter). Lighter fractions will be carried into a cyclone that removes the heavier dust and the lighter dust will be captured in a bag filter fitted with an 18 metre stack outlet (new emission point A11). The abatement techniques are in line with BAT 25 of the Waste Treatment BRef (See Annex 4).

The applicant provided modelling for the new emission point A11 and its impacts on the nearest residential and ecological receptors. The model assumed an emission limit of 5 mg/Nm^3. The applicant has calculated Process Contributions (PC) and Predicted Environmental Concentrations (PEC) at locations within the immediate vicinity and all identified sensitive receptor locations. The modelling results for each pollutant are discussed separately below.

Particulate matter does not have an ecological standard. The impacts on designated sites are discussed in more detail in the HRA (see section 11 for details).

PM_{10}

For long term (annual) emissions the predicted process contribution at all nearest receptors was less than 1% of the environmental assessment level (EAL) of 40 µg/m^3

[7] Public register - Customer Portal (naturalresources.wales)

with the highest (grid maximum) being 0.38 µg/m^3 (0.95% of the EAL). As such the emissions of PM_{10} screen out as insignificant.

The short term (90.4%ile of 24 hour mean) emissions from the shredder also screened out as insignificant (process contribution being less than 10% of the short term EAL) with the highest being 2.15 µg/m^3 (or 4.3 % of the short term EAL of 50 µg/m^3). As such, we are satisfied that no further assessment of this pollutant is required.

$PM_{2.5}$

For long term (annual) emissions of $PM_{2.5}$ the highest process contribution was 0.38 µg/m^3 which was 1.9% of the long term EAL[1] of 20 µg/m^3. As this is more than 1% of the long term EAL, it did not screen out in the initial stage. As such, the predicted emissions was assessed at the next stage where the predicted environmental concentration (PEC) (process contribution + background) was assessed against the long term EAL.

The highest PEC was 8.4 µg/m^3, which was 42% of the EAL. As the PEC was less than 70% of the long term EAL, the emissions screened out as insignificant at this stage and no further assessment is required.

[1]EAL was changed to 20 µg/m^3 from 25 µg/m^3 on the 22/03/2023, the applicant had assessed against the old EAL, however we have checked against the new EAL and have determined that the emission continues to screen out as insignificant for the PEC stage.

10.1.3 Emission limits

We have decided that emission limits should be set for the parameters listed in the permit.

Emission point A11 associated with the new shredder will have an emission limit of 5 mg/Nm^3. This emission limit meets the BAT AEL for mechanical waste (BAT 25 of the Waste Treatment BRef). The air quality assessment has shown that the emissions at this level screens out so the limit of 5 mg/m^3, would not cause any significant impact to human health. The operator has stated that the abatement will achieve the ELV and that in reality the emissions would be significantly lower than the ELV.

Based upon the information in the application and the measures that will be imposed by the permit we are satisfied that the appropriate measures will be in place to protect air quality for human health.

10.2. Assessment of impact to surface and ground water

The variation does not include any new point source emissions to surface water. The only discharge to ground water is rain water run off from roadways and carparks for facilities located where no waste is stored or processed. The drainage system is designed to segregate the water run off from areas where waste is both stored from the roadway system. This is described in more detail in section **9.3 Drainage Strategy.**

The surfacing and surface water drainage system associated with the land subject to this variation application, has been re-engineered so that none of the activities take place on unsurfaced ground, or without segregation of water runoff, as described in section 9.3 Drainage Strategy. This is recorded in more detail an OGN 72 assessment available to view on our online public register.

Emission Limits

As the only water discharge to ground is from the internal road way and car park (where no waste is storage or processing). We have not imposed put any emission limits on the discharge.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution of ground and surface water.

10.3. Emissions to sewer

The variation includes changes to an existing discharge to sewer. As part of the re-engineered drainage strategy (revised in 14/12/2023) the site will segregate water runoff from the waste storage and processing areas where contamination can occur from the internal roadways. All water runoff from the waste storage and processing

areas is classified as trade effluent and is collected and discharged to sewer (see section 9.3 on details of the drainage scheme).

The emission point S5 had previously been used as a discharge point to sewer for water from the scrap processing centre. The applicant had stated (in sections 11.3 and 2.2 of their main installation report (Version Rev 2, December 2023)) accompanying the variation application that the discharge point has now been reassigned for the discharge of contaminated water from the shredder yard. The emission point has now moved, with an amended site plan showing the new location of the discharge point.

The applicant has a trade effluent consent with Dŵr Cymru Welsh water that has been amended for the new activity. With the expectation of arsenic all limits in the trade effluent consent align with the BAT-AELs for indirect discharge. The trade effluent consent uses a higher arsenic limit as the methods used by the sewer undertaker cannot detect under 300 µg/l.

The applicant submitted a H1 assessment for the discharge to sewer at emission point S5. The emissions all screen out as insignificant including priority substances, mercury and cadmium. The wastewater treatment works where the effluent is to be treated (Cardiff wastewater treatment works NRW Permit number AN0303701) already has limits in place for many of these substances.

Emission limits

With put the following limits for discharge to sewer;

- arsenic 0.05 mg/l; and
- Hydrocarbon oil index (HOI) 0.5-10 mg/l

We have put these limits in place as they are not covered at the same level of protection by the trade effluent consent.

For the rest of the substances we have not set any emission limits for the discharge to sewer as the operator already has a trade effluent consent with the sewerage

undertaker that provides the equivalent environmental protection. Adding limits would duplicate the requirements already present in the trade effluent.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution of surface waters as a result of the sewer discharge.

10.4. Fugitive emissions

The applicant has identified the following potential fugitive emissions in their environmental risk assessment:

- Fugitive emissions of dust from waste handling and blow off from waste pile at high wind speeds; and
- Pests from stockpiling of tin cans.

The applicant has produced management plans to minimise the likelihood of fugitive events. The measures included are described in more detail in the sections below.

10.4.1 Dust

The proposed activity including the mechanical treatment and storage can lead to increased risk of fugitive emissions of dust created by the site's activities (loading and handling of materials).

As such the applicant has submitted the following documents:

- Dust impact assessment
- Dust management plan

We have assessed the applicant's dust management plan against our guidance for dust management. We are satisfied that the dust management plan will reduce the likelihood of fugitive emissions of dust from occurring.

The applicant has also proposed to add two dust monitors at the Rover Way site. These monitors will be Turnkey Optical Particle Analysis System (TOPAS). We have set improvement condition IC9 requiring the Operator to confirm the final location of these monitors when installed. See Annex 2 of this document.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise fugitive emissions and to prevent pollution from fugitive emissions of dust.

Permit condition 3.2.1 requires that emissions of substances not controlled by emission limits (i.e., fugitive emissions) shall not cause pollution. Condition 3.2.2 requires that a management plan is developed if pollution is subsequently identified.

10.4.2 Pests

The applicant has submitted a revised tin stock piling management plan as part of the application. This was in response to previous incidences involving files at the site.

The plan outlines the following management techniques;

- Roles and responsibilities of persons managing tin stock piling including treatment, monitoring and actions taken.
- Daily inspection of pest levels.
- Storage arrangements of the tin stockpiles including stock turnover (oldest tins to be used first).
- Frequency of treatment of tin stockpiles in the summer and winter months.
- Procedures for pest control management and actions to be taken if pest levels increase.

The pest management plan also outlines that any incoming waste that poses a risk to cause pests will be rejects from the site. If the number of files/pest levels are in exceedance of the level that can cause nuisance, the operator will stop acceptance of tin cans and properties sending the remaining cans to the Melt Shop for processing.

In accordance with the plan the amount of tin cans at the site is limited to 6000 tonnes during summer months (March-October) and 10000 tonnes in winter months (November-February).

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise pest from the sites and to prevent pollution from pests.

The Tins stockpile management plan has been incorporated into the permit through the operating techniques table (table S1.2). Permit condition 3.6.1 requires that activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. Condition 3.6.2 requires that a management plan shall be developed if pollution is subsequently identified.

10.5. Odour impact

The variation is unlikely to change the risk of odour impact at nearby receptors. The applicant has shown in their risk assessments that the proposed activities do not involve any process or wastes that would lead to odour emissions and that there would be no additional risk of odour from the variation proposal.

Based on this information we are satisfied that the risk of odour would not change as a result of the variation and the activities are low risk in terms of odour.

Condition 3.3.1 in the permit requires that emissions from the activities are free from odour at levels likely to cause pollution outside the site. We are satisfied that this will be sufficiently protective in conjunction with the measures described by the applicant for minimising odour at the installation.

10.6. Noise and vibration assessment

There are sensitive receptors within the vicinity of the installation. The nearest receptors identified by the applicant are as follows:

- Willows Avenue – located approximately 390 meters north of the shredder at Rover Way
- Travellers site -located approximately 450 metres to the east of the shredder (400 metres east of site boundary)
- Greenbay Road located approximately 560 meters north west of the shredder
- Hide Close - approximately 560 metres north of the shredder

The applicant has identified the following sources of noise in their environmental risk assessment and noise and vibration management plan:

- Processing of waste using the shredder and shear
- Associated activities of the shredder site (such as waste handling)
- On site movement of heavy goods vehicles on site
- Loading/unloading of scrap into the shredder and off vehicles.

We also queried if the pumps used for pumping water run off to sewer posed any risk of noise. The applicant had confirmed that the pumps are housed in a concreate chamber and, therefore pose no risk of additional noise impact. We agreed with this statement.

The applicant submitted a noise impact assessment and Nosie modelling files to show the predicated noise impacts on the nearest residential receptors.

During the determination we asked the applicant to revise their noise impact assessment without the waste pile as a noise barrier as the pile is not a permanent structure and would not be of a consistent shape, size or density to be used as such (see second schedule 5 notice).

The noise impact assessment concluded that although the installations existing activities had a +6 dB over background (and therefore adverse impact likely) at one of the receptors (Hide Close) and below 5 dB for the other receptors (low adverse impact likely), the new activities at the shredder yard (alone) had rating levels below the background level. We have therefore concluded that the new activities alone would not impact the nearest receptors as they will not be perceived over the existing noise from the site at the nearest receptors. The new activity will not lead to an increase at the nearest receptors.
We did an audit of the noise impact assessment and the provided modelling files. We agreed with the applicant's assessment including the assumptions and justifications used in the assessment.

The applicant has submitted a Noise Management Plan (NMP) which details various measures to minimise and mitigate pollution due to noise. The NMP outlines the potential sources of noise, monitoring to be carried out and control measures in place to mitigate and minimise noise impacts on the nearest receptors. Section 3.7 of the main installation report accompanying the application also states that the shredder will be located within a noise enclosure.

We have compared the measures proposed to minimise Noise at for the site to the guidance Noise and vibration management: environmental permits - GOV.UK

(www.gov.uk) and relevant BAT conclusions of the Waste Treatment BRef (see annex 4 of document) and are satisfied the techniques represent appropriate measures for the installation. The NMP will be incorporated into the operating techniques section of the permit (Table S1.2).

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where not practicable to minimise the effects of noise and vibration.

Conditions 3.4.1 of the permit requires noise from the activities to be below that which could cause pollution outside the site. We are satisfied that this will be sufficiently protective in conjunction with the measures described by the applicant for minimising noise at the installation.

11. Impact on National Site Network Sites, SSSIs and non-statutory sites

The applicant has used the relevant screening distance criteria to identify protected nature conservation sites which could be at risk from the proposal. We screened National Network Sites to 10 km and SSSI and non statutory sites to 2 km. We are in agreement with the screening distances used.

A full assessment of the variation application and its potential to affect the identified sites has been carried out as part of the permit determination process. National Site Network sites, Sites of Special Scientific Interest (SSSI) and non-statutory conservation sites will be discussed separately below.

11.1 The National Site Network

The following National Site Network sites are located within 10 km of the installation:

- Severn Estuary (Wales) SAC (UK0013030) / SPA (UK9015022) / Ramsar (UK11081) –adjacent to site boundary and approximately 200 metres from location of proposed changes. All features listed in the HRA are confirmed to be within 10 km of the site and all features apart from Subtidal Sandbanks are located in the area closest to the installation.
- Severn Estuary (England) (9.8 km south from the proposal)

- Cardiff Beech Woods (UK0030109)

A Habitat Regulations Assessment (HRA) was completed to assess the potential to affect any of the sites identified.
The impacts pathways (listed in detail in the HRA assessment) were screened out as insignificant for Cardiff Beech Wood and proportion of the Severn Estuary located in England but there were potential impact pathways (when considered alone or in combination) that could impact parts of the Severn Estuary located in Wales.

In light of the conclusions of an appropriate assessment and taking account of the advice received from NRW's protected sites advisors, it has been established that the project will not adversely affect the integrity of any National Site Network site, taking into account any conditions or restrictions as applicable, either alone or in-combination with other plans and projects (as documented in section 4 of OGN 200 Form 1, and section 5 if applicable). The full assessment is available to view on the public register, see here: https://publicregister.naturalresources.wales/Search/Download?RecordId=157958

11.2 Sites of Special Scientific Interest (SSSI)

The following SSSIs are located within 2 km of the installation:

- Severn Estuary (Wales) SSSI – Located 88-320 metres from proposals
- Gwent Levels - Rumney and Peterstone -approximately 1500 metres to the east of the proposed changes

As a Section 28G Authority as defined in the Countryside Rights of Way Act 2000 permitting teams within NRW has a legal duty, under Section 28I of the Wildlife and Countryside Act 1981, to consult with NRW for formal advice when permitting an activity which has been determined to be likely to damage the features of a SSSI.

To determine if consultation is required, a SSSI Assessment was completed. The permission is not likely to damage any of the flora, fauna or geological or physiological features which are of special interest because of conditions. Therefore, no consultation with NRW's protected sites advisors is required.
A copy of the assessment is available to view on the public register, please see here.

11.3 Non-statutory conservation sites

The following relevant non-statutory sites are located within 2 km of the installation:

- Ocean Parks South
- Cardiff Heliport Fields
- Tidal Sidings
- Lamby Salt Marsh
- Pengam Moors
- River Rhymney
- Lamby Way
- Rhymney Grassland East
- Lamby Salt Marsh
- Beach Sidings
- Roath Brook

We have concluded that the proposal is unlikely to cause significant pollution at these sites, given that it has been concluded the impacts for air and water will not have any impact pathway to cause damage to SAC, SPA Ramsar and SSSI sites located much closer to the proposal than the non-statutory sites.

Based upon the information in the application we are satisfied that there will no likelihood of significant pollution at the non-statutory conservation sites identified.

12. The Permit Conditions

12.1 Updating permit conditions during consolidation

We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation. The new conditions have the same meaning as those in the previous permit(s).

12.2 Incorporating the variation

We have specified that the applicant must operate the permit in accordance with descriptions in the application, including additional information received as part of the determination process.

These descriptions have been specified in the Operating Techniques table (Table S1.2) in the permit.

12.3 Emission Limits

Article 14(3) of IED states that BAT conclusions shall be the reference for permit conditions. Article 15(3) further requires that under normal operating conditions; emissions do not exceed the emission levels associated with the best available techniques as laid down in the decisions on BAT conclusions.

BAT conclusions set out specific limits that the operator must comply with. Modelling has been used to demonstrate that the operator will be able to comply with the emission limits described as BAT.

For emissions to air we have set emission limits for particulate matter from the new abatement stack from the shredder (listed as emission point A11 on the permit).

For emissions to sewer have set emission limits for arsenic and hydrocarbon oil index for discharge to sewer (see section 10.3 for more details).

There are no changes to any other existing emission limits on the permit as a result of the variation.

12.4 Monitoring

We have decided that monitoring should be carried out for the parameters listed in Schedule 3 of the permit using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with the emissions limits in the permit.

For emissions of particulate matter to air , the methods for continuous and/or periodic monitoring are in accordance with Monitoring stack emissions: techniques and standards for periodic monitoring - GOV.UK (www.gov.uk) and/or in line with BAT

requirements set out in Waste treatment BRef. Monitoring frequencies have also been considered in line with BAT requirements.

Based on the information in the application and the requirements set in the conditions of the permit we are satisfied that the monitoring techniques, personnel and equipment employed by the Operator will have either MCERTS certification or MCERTS accreditation as appropriate.

We have put in monitoring requirement for the new point source emissions to air (emission point A11) from the new shredder.

Except for arsenic we have not added monitoring requirements for sewer discharge. This is because the applicant is required to report for their trade effluent consent and so we have not put in the requirement in order to avoid duplication of regulation.
We have put monitoring required for arsenic as the trade effluent consent limit was above the BAT-AEL of 0.05 mg/l.

12.5 Reporting

We have specified the reporting requirements in Schedule 4 of the Permit to ensure data is reported to enable timely review by Natural Resources Wales to ensure compliance with permit conditions and to monitor the efficiency of material use and waste recovery at the installation.
We have amended the reporting conditions to include reporting for emissions from the new shredder (A11).
except for arsenic we have not added reporting requirements for sewer discharge. This is because the applicant is required to report for their trade effluent consent and so we have not put in the requirement in order to avoid duplication of regulation.

12.6 Raw Materials

There are no limits to the specifications of raw materials in the permit and the applicant has not proposed using any new raw materials.

12.7 Waste Types

We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facilities.

We are satisfied that the operator can accept these wastes for the following reasons

- The operator already accepts many of the same waste codes at other parts of the site and/or waste of a similar nature at the site.
- The operator has applied the appropriate best available techniques from the Waste Treatment BRef for handling of waste of this nature.
- Of the waste that is accepted, the waste is sorted and only the ferrous/non ferrous metal fractions will be subject to shredding, with the rest of the waste to be exported from the site after sorting and separation from the metal waste. We have specified the waste that goes for shredding in a different table of the permit (Table S2.6a) from the waste that is generally accepted on site (Table S2.6)
- A Fire prevention and mitigation plan has been produced to minimise the likelihood of fire and minimises impacts in the unlikely event of a fire from the waste.

We made these decisions with respect to waste types in accordance with the Waste Treatment BRef, the guidance on fire prevention and mitigation plans and EPR RGN 5 on Operator Comptence.

12.8 Improvement conditions

Based on the information on the application, we consider that we need to impose improvement conditions. Details of the improvement conditions used can be found at Annex 2.

We have imposed the improvement conditions for the following reasons:

- IC9 - The applicant has proposed additional dust monitors (Turnkey Optical Particle Analysis Systems) at rover way. The improvement contrition is to confirm the finalised location of the monitors.
- IC10 – This improvement condition is for the applicant to conduct additional noise monitoring after the site is commissioned to confirm the assumptions made in the noise impact assessment are correct.

13. OPRA

The OPRA score has changed as a result of this variation. The new agreed score is now 197 (was 193). This will form the basis for ongoing subsistence fee’s.

ANNEX 1: Pre-Operational Conditions

No pre-operational conditions have been set as a result of this variation.

ANNEX 2: Improvement Conditions

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC9	The operator shall confirm the installation and the finalised location (including national grid referenced) of two Turnkey Optical Particle Analysis Systems (TOPAS) monitors (or alternative method as agreed in writing by Natural Resources Wales)	Within 6 months of issue of variation V010, or as otherwise agreed in writing by Natural Resources Wales
IC10	Following successful commissioning and establishment of routine steady operation[1], the Operator shall undertake a BS 4142:2014+A1:2019 noise impact assessment following guidance set out in Noise and Vibration Management: Environmental Permits and Method implementation document (MID) for BS 4142, to demonstrate that impacts do not exceed those specified in the Noise report "Celsa Manufacturing UK Commercial Noise Assessment" dated 21/07/2023. Upon completion of the work, a written report shall be submitted to Natural Resources Wales for approval.	Within 6 months of issue of variation V010, or as otherwise agreed in writing by Natural Resources Wales

1 *Routine steady operation is defined as "normal operation" consists of any operation of the plant not including shut-down and abnormal operation, unless additional definitions are agreed in writing with Natural Resources Wales*

ANNEX 3: Consultation Reponses

1. Advertising and consultation on the Application

The application has been advertised and consulted upon in accordance with Natural Resources Wales Public Participation Statement. Responses to this consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex.

Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Public Health Wales- No concerns raised as long as NRW is satisfied that the site is compliant with BAT, fugitive emission control and Noise impact	We have addressed these in our determination and are satisfied that the operator will minimise fugitive emission to air through their dust management plan and that proposed noise controls will minimise impacts.
South Wales Fire and Rescues Service -Operator to confirm the arrangement for “outside of working hours”. Will staff/machinery be available at these time	Addressed to the operator as part of the third schedule 5 notice request more information dated 31/08/2023. FPMP submitted 14/12/2023 added details on outside of working hours arrangements (Section 10.6 of the FPMP)

Consultation Responses from Members of the Public and Community Organisations

We did not receive any consultation response from members of the public or community organisations during the initial consultation.

Response Received from	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
None	N/A

Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

Response Received from	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
None	N/A

Representations from Community and Other Organisations

Response Received from	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
None	N/A

Representations from Individual Members of the Public

Response Received from	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
None	N/A

2. Advertising and consultation on the draft decision

Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
None	N/A

ANNEX 4: BAT Assessment

BAT Conclusions for Waste Treatment in the Official Journal of the EU on 10th August 2018. There are 53 BAT Conclusions. This checklist provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the permit. For definitions and acronyms see the BAT Conclusions Document: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018D1147

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
OVERALL ENVIRONMENTAL PERFORMANCE			
1	**Environment Management System (EMS) – ALL of the following:**		
	I.	Management commitment	Currently Compliant – The site will continue to implement their EMS which is accredited to ISO 14001. ISO 14001 accreditation cover most of but not all of BAT 1 requirements
	II.	Environmental policy development including CI of performance	As above
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	Currently complaint
	IV.	***Implementation of procedures***	
		(a) Structure & responsibility	Currently complaint- Implemented through the site ISO 14001 EMS system
		(b) Recruitment, training, awareness & competence	
		(c) Communication	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
		(d) Employee involvement	
		(e) Documentation	
		(f) Effective process control	
		(g) Maintenance programmes	
		(h) Emergency preparedness & response	
		(i) Safeguarding compliance with environmental legislation	
	V.	***Checking performance and taking corrective action***	Currently Compliant - As above
		(a) Monitoring & measurement	
		(b) Corrective and preventive action	
		(c) Maintenance of records	
		(d) Independent (where practicable) internal or external EMS auditing	
	VI.	Senior management review of EMS	Currently Compliant -As above
	VII.	Following development of cleaner technologies	Currently Compliant – Through Celsa Manufacturing UK Limited's sustainability statement
	VIII.	Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life	Currently Compliant – Integrated into the site through original IPPC application
	IX.	Regular sectoral bench marking	Currently Compliant – through key performance indicators for the sector
	X.	Waste stream management (BAT 2)	See BAT 2
	XI.	Inventory of wastewater & waste gas streams (BAT 3)	See BAT 3
	XII.	Residues Management Plan – S6.5	Currently Compliant – Residues are reduced through the use of the waste management

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	XIII.	Accident Management Plan – S6.5	Currently Compliant – Emergency management plan in place for the site in the event of accidents
	XIV.	Odour Management Plan (BAT 12)	Not applicable
	XV.	Noise & Vibration Management Plan (BAT 17)	See BAT 17
2	**Improving overall environmental performance – ALL of the following:**		
	a.	Set up and implement waste characterisation & pre-acceptance procedures	Currently Compliant – Pre acceptance procedures are implemented through the purchasing process (pre-supplier approval).
	b.	Set up and implement waste acceptance procedures	Currently Compliant - applicant has waste acceptance procedures outlined in their safe working procedures CRUK-SWP-OPS 002-01 Scrap Inspection Rev1
	c.	Set up and implement a waste tracking system & inventory	Currently Compliant – applicant has an electronic waste tracking system
	d.	Set up and implement an output quality management system	Currently Compliant – Quality management is linked to operations of electric arc furnace in line with the applicants quality management system
	e.	Ensure waste segregation	Currently Compliant -outlined in working procedure and waste management
	f.	Ensure waste compatibility prior to mixing or blending	Currently Compliant -as above
	g.	Sort solid incoming waste – S6.4	Currently complaint- as above
3	**Establish and maintain a wastewater and waste gas inventory as part of the EMS - ALL of the following:**		
	Information on characteristics of waste and waste treatment processes		
	(i)(a)	simplified process flow sheets showing emission sources	Currently Compliant – outlined in the main installation report accompanying the variation application showing where emissions associated with the new activities occur

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	(i)(b)	Process-integrated and wastewater/waste gas treatment descriptions including performance	Currently Compliant – As above
	Information on characteristics of wastewater streams		
	(ii)(a)	*Mean and variability of:*	Currently Compliant – Emission inventory for waste gas and water part of the EMS. Parameters are to be monitored as part of the applicant trade effluent consent
		Flow	
		pH	
		Temperature	
		Conductivity	
	(ii)(b)	*Mean concentration, load and variability of:*	Currently Compliant – Parameters are monitored as part of the trade effluent consent. The exception to this is arsenic which has a stricter BAT-AEL than contained in the trade effluent consent, so will be monitored as part of the EPR Permit.
		Total suspended solids	
		COD/TOC	
		Nitrogen species	
		Phosphorous	
		Metals	
		Priority substances/micropollutants	
		Any other relevant compounds	
	(ii)(c)	*Bioeliminability data (see BAT 52):*	
		BOD	Not Applicable -Activities associated with BAT 52 are not carried out on this site
		BOD to COD ratio	
		Zahn-Wellens test	
		Biological inhibition potential	
	Information on characteristics of waste gas streams		
	(iii)(a)	*Mean and variability of:*	
		Flow	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
		temperature	Currently Compliant -BAT supporting document (page 17 and 18) and main installation report outlines that waste gas streams inventory will be takene on the new emission point A11.
	(iii)(b)	*Mean concentration, load and variability of relevant substances:*	
		Organic compounds	
		POPs e.g. PCBs	
		Any other relevant compounds	
	(iii)(c)	Flammability	
		Lower and Higher Explosive Limits	
		Reactivity	
	(iii)(d)	*Presence of other substances that may affect the gas treatment system or plant safety:*	
		O2	
		N2	
		Water vapour	
		Dust	
4	**Reducing environmental risk associated with waste storage – <u>ALL</u> of the following:**		
	a.	Optimised storage location	Currently Compliant – The applicant will optimise storage based on available space. The storage capacity will be optimised to the extent allowed within the fire prevention and mitigation plan.
	b.	Adequate storage capacity	
	c.	Safe storage operation	
	d.	Separate area for storage & handling of packaged hazardous waste	
5	**Set up and implement procedures to reduce the environmental risk associated with handling and transfer of waste - include following elements:**		
	Carried out by competent staff		

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	Duly documented, validated and verified	Currently Compliant through use of procedures and safety working practices
	Spill prevention, detection and mitigation measures	
	Take precautions when mixing or blending wastes	
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	
	MONITORING	
	Relevant emissions to water: monitor key process parameters at key locations	
	Key process parameters	
6	Wastewater flow	Currently Compliant – Monitoring standards subject to sewer undertaker consent for trade effluent. The exception to this is arsenic which has a stricter BAT-AEL than contained in the trade effluent consent, so will be monitored as part of the EPR Permit. Applicant will send sample to appropriate lab for testing to the required standards.
	pH	
	Temperature	
	Conductivity	
	BOD	
	Other process parameters	
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	As above
	Final treatment inlet	
	Discharge point (to the environment)	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	Other location		
7	Monitoring emissions to water (refer to table) Monitoring parameters depend on waste treatment process(es) involved		Currently Compliant
8	Monitoring emissions to air (refer to table) Monitoring parameters depend on waste treatment process(es) involved		Currently Compliant
9	**Monitoring diffuse emissions of organic compounds to air from processes involving solvents. Use one or a combination of the following:**		
	a	Measurement – S6.2 descriptions	Not applicable – no solvents are used in the process
	b	Emissions factor calculation	
	c	Mass balance calculation	
10	**Periodically monitor odour emissions where nuisance is expected and/or has been substantiated (monitoring frequency is outlined in BAT 12)**		
	Use EN standards e.g. 13725 or 16841		Not applicable – the processes done at the scrap yard do not lead to any significant odour
	Use equivalent methods e.g. ISO / national / international monitoring standards		
11	**Annual monitoring for:**		
	- **Water, energy and raw materials**		Currently Compliant – Celsa integrate as part of the sites EMS
	- **Generation of residues and wastewater**		Not applicable – only waste water is from rain water runoff. Water is not used in the process apart from
EMISSIONS TO AIR			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
12	**Set up, implement and review an Odour Management Plan (as part of the site EMS) where nuisance is expected and/or has been substantiated. Include ALL of the following:**		
	Protocol containing actions and timelines		Not applicable – Site's (waste) activities do not include any waste or processes that are odours or will lead to a risk of odour emissions.
	Protocol for conducting odour monitoring (BAT 10)		
	Protocol for response to odour incidents/complaints		
	Odour prevention and reduction programme		
13	**Techniques to prevent, or where not practicable reduce odour emissions. Use one or a combination of the following:**		
	a.	Minimising residence times (open systems only)	Not applicable – Site's (waste) activities do not include any waste or processes that are odours or will lead to a risk of odour emissions.
	b.	Use chemical treatment (N/A if desired output is hampered)	
	c.	Optimising aerobic treatment – see examples. Refer to BAT 36 for wastes other than water-based liquid waste.	
14	**Techniques to prevent, or where not practicable reduce diffuse emissions to air, in particular of dust, organic compounds and odour. Use one or a combination of the following:**		
	a.	Minimising potential diffuse emission sources – see examples	Currently Compliant – dust management plan implemented at the site which integrates techniques to minimise emission sources of dust
	b.	Select and use high-integrity equipment – see examples	Currently complaint
	c.	Corrosion prevention – see examples	Currently complaint
	d.	Containment, collection and treatment of diffuse emissions – see examples	Currently complaint- Shredder to be equipped with abatement (bag house with cyclone see BAT 25).
	e.	Dampening (with water or fog)	Currently Compliant – The shredder is to be equipped with a water injection system to dampen down dust.
	f.	Maintenance – see examples	Currently Compliant - equipment regular under goes maintenance in line with dust management plan and noise management plan

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	g.	Cleaning of waste treatment and storage areas – see examples	Currently Compliant -implemented through dust management plan and house keeping
	h.	Leak Detection And Repair (LDAR) programme for organics – S6.2	Not applicable
15	**Use flaring only for safety reasons or non-routine operating conditions (OTNOC). Use <u>both</u> of the following:**		
	a.	Correct plant design – see examples	Not applicable- no flaring done on site
	b.	Plant management including gas system balancing and advanced process control	
16	**Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:**		
	a.	Correct design of flaring devices – see examples	Not applicable- no flaring done on site
	b.	Monitoring and recording as part of flare management – see examples	
NOISE AND VIBRATIONS			
17	**Set up, implement, and regularly review a Noise and Vibration Management Plan (as part of the EMS) where nuisance is expected and/or has been substantiated. Include <u>ALL</u> of the following:**		
	I.	Protocol with actions and timelines	Currently Compliant – applicant has supplied a noise management plan which has measures in place to minimise noise which may cause nuisance, monitor noise on site and actions to be taken if there are significant noise issues See section 10.6 for more details
	II.	Noise and vibration monitoring plan/protocol	
	III.	Noise & vibration complaint response plan/protocol	
	IV.	Noise and vibration reduction programme	
18	**Techniques to prevent, or where not practicable reduce noise and vibration emissions. Use one or a combination of the following:**		
	a.	Appropriate location of equipment and buildings	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	b.	Operational measures – see examples	Currently Compliant – Shredder is to be located in a noise abatement enclosure (see main installation report V3) See section 10.6 for more details
	c.	Low-noise equipment – see examples	
	d.	Noise & vibration control equipment – see examples	
	e.	Noise attenuation – see examples	
EMISSIONS TO WATER			
19	**Optimise water consumption, reduce wastewater generation and prevent or where not practicable reduce emissions to soil and water. Use one or a combination of the following:**		
	a.	Water management – see examples	Not applicable – only water process will be from dust abatement
	b.	Water recirculation	Not applicable – only water process will be from dust abatement
	c.	Impermeable surface	Currently Complaint- the shredder and shear will be placed on a concrete slab (replacing the previous surfaced ground). The water run off is to flow to a sealed drainage system and discharge to sewer under a trade effluent consent.
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	Currently Compliant – All hazardous substances (oils, fuels from end of life vehicles) stored in bunded areas. Waste water tank on impermeable concert and in area of sealed drainage. See section 9.4 for more details
	e.	Roofing of waste storage and treatment areas	Not applicable
	f.	Segregation of water streams (being mindful of existing plant constraints)	Currently Compliant -As part of the revised drainage scheme (14/12/2023) all water from the waste process area will be

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
			segregated from rain water runoff from facilities (such as site car park) and roads outside areas where waste processing and storage occurs. Rain water run off from roadway and facilities not associated with the direct process discharge to ground via a cellular Water run off from areas where waste is stored and can be contaminated has been classed as foul and is to discharge to sewer under a trade effluent consent.
	g.	Adequate drainage infrastructure	Currently Compliant – the applicant will have drainage that is collect all contaminated water runoff from areas where waste is stored/treated and discharge to sewer.
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	Currently Compliant - all equipment and infrastructure subject to regular maintained
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	Currently Compliant – Water tanks used to store rain water run off prior to discharge to sewer.
20	**Treat wastewater using a combination of:**		
	Preliminary, primary and general treatment		
	a.	Equalisation	Not applicable
	b.	Neutralisation	
	c.	Physical separation	
	Physico-chemical treatment		
	d.	Adsorption	
	e.	Distillation/rectification	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	f.	Precipitation	Currently Compliant – BAT 20 j Water run off from waste processing areas will be filtered using aqua x-change prior to the collection and discharge to sewer.
	g.	Chemical oxidation	
	h.	Chemical reduction	
	i.	Evaporation	
	j.	Ion exchange	
	k.	Stripping	
	Biological treatment		
	l.	Activated sludge process	Not applicable
	m.	Membrane bioreactor	Not applicable
	Nitrogen removal		
	n.	Nitrification/denitrification (where biological treatment used)	Not applicable
	Solids removal		
	o.	Coagulation and flocculation	Currently Compliant – BAT 20 g Water run off from waste processing areas will be filtered using aqua x-change prior to the collection and discharge to sewer
	p.	Sedimentation	
	q.	Filtration (sand, micro, ultra)	
	r.	Flotation	
	BAT-AELs for DIRECT discharges to a receiving waterbody (mg/l) *Table 6.1 and its supporting notes. Monitoring requirements are outlined in BAT 7*		
	TOC	10.0-60 10-100 for water-based liquid waste	Not Applicable – No direct discharge to surface or ground other than uncontaminated rain water run off from areas outside of contamination and waste processing such as roadways and facility car park. All water runoff from waste treatment and storage areas will discharge to sewer.
	COD (TOC is preferred)	30-180 30-300 for water-based liquid waste	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	Suspended solids	5.0-60	As above
	HOI	0.5-10 applying to specific waste treatments	As above
	Total N	1-25 for biological treatment and waste oil re-refining 10-60 for water-based liquid waste	As above
	Total P	0.3-2 for biological treatment 1-3 for water-based liquid waste	As above
	Phenol	0.05-0.2 for waste oil re-refining and physio-chemical treatment of waste with CV 0.05-0.3 for water-based liquid waste	As above
	Free CN-	0.02-0.1 for water-based liquid waste	As above
	AOX	0.2-1 for water-based liquid waste	As above
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		As above
	As	0.01-0.05	As above
	Cd	0.01-0.05	
	Cr	0.01-0.15	
	Cu	0.05-0.5	
	Pb	0.05-0.1	
	Ni	0.05-0.5	
	Hg	0.5-5	
	Zn	0.1-1	

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	As above
	Cd	0.01-0.1	
	Cr	0.01-0.3	
	Hexavalent Cr [Cr(VI]	0.01-0.1	
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	
	Zn	0.1-2	
	BAT-AELs for INDIRECT discharges to a receiving waterbody (mg/l) *Table 6.2 and its supporting notes. Monitoring requirements are outlined in BAT 7*		
	HOI	0.5-10 applying to specific waste treatments	Currently Compliant – substances are to discharge to sewer under a trade effluent consent. The expectation of arsenic proposed trade effluent consent is to have the discharge limits that are equivalent or lower than the BAT-AELs
	Free CN-	0.02-0.1 for water-based liquid waste	Not applicable
	AOX	0.2-1 for water-based liquid waste	Not applicable
	Metals & Metalloids – specific waste treatments as listed in Table 6.2		
	As	0.01-0.05	

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	Cd	0.01-0.05	Currently Compliant – substances are to discharge to sewer under a trade effluent consent. The expectation of arsenic proposed trade effluent consent is to have the discharge limits that are equivalent or lower than the BAT-AELs. Arsenic-Applicant had stated that DCWW are unable to test below 0.3 mg/l. We have put the BAT-AEL for arsenic at 0.05 as this has been the level assessed. All other substances have not been included on the permit to avoid duplicating regulation.
	Cr	0.01-0.15	
	Cu	0.05-0.5	
	Pb	0.05-0.1	
	Ni	0.05-0.5	
	Hg	0.5-5	
	Zn	0.1-1	
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	Not applicable- No treatment of water based liquids are done on site
	Cd	0.01-0.1	
	Cr	0.01-0.3	
	Hexavalent Cr [Cr(VI]	0.01-0.1	
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	
	Zn	0.1-2	
EMISSIONS FROM ACCIDENTS AND INCIDENTS			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
21	**Techniques to prevent or limit the environmental consequences of accidents and incidents, as part of the Accident Management Plan. Use <u>ALL</u> of the following:**		
	a.	Protection measures – see examples	Currently compliant – Emergency management plan ECP 34
	b.	Management of incidental or accidental emissions	
	c.	Incident/accident registration and assessment system – see examples	
MATERIAL EFFICIENCY			
22	**Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders**		Not applicable
ENERGY EFFICIENCY			
23	**Use energy efficiently by using <u>both</u> of the following techniques:**		
	a.	Energy efficiency plan	Currently Compliant – integrated into the site wide energy efficiency plan as part the applicants ISO14001 EMS systems.
	b.	Energy balance record	
REUSE OF PACKAGING			

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
24	**Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)**	Not applicable- not relevant for the wastes coming into the site
	MECHANICAL TREATMENT OF WASTE (GENERAL BAT)	
25	**Reduce emissions to air of dust, particulate-bound metals, PCDD/F and dioxin-like PCBs by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**	
	a. Cyclone – see S6.1	Currently Compliant - The shredder is equipped with cyclone and water injections system (BAT 25 a and d). emission point equipped with filter bag house
	b. Fabric filter – see S6.1	
	c. Wet scrubbing – see S6.1	
	d. Water injection into the shredder	
	BAT-AEL for channelled dust emissions to air from the mechanical treatment of waste (mg/Nm3) *Table 6.3 and its supporting note. Monitoring requirements are outlined in BAT 8*	
	Dust: 2.0-5.0	Currently complaint. Applicant stated that the new abatement will easily reach the emission limit (modelling done on worst case scenario of 5 mg/m^3. The applicant had stated that the abatement would achieve far lower than this).
	MECHANICAL TREATMENT OF METAL WASTE BY SHREDDING	
26	**Improve overall environmental performance and prevent emissions due to accidents and incidents. Use BAT 14g <u>AND ALL</u> of the following techniques:**	
	(a) Detailed inspection procedure for baled waste before shredding	Currently complaint- Safe working procedures in place to inspect all materials/waste

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	(b)	Remove dangerous items from waste inputs and dispose of them in a safe manner	
	(c)	Treatment of containers accompanied by a declaration of cleanliness	
27	**Prevent deflagrations and reduce emissions from deflagrations. Use technique a. AND ONE OR BOTH of techniques b. and c.**		
	a.	Deflagration management plan with reduction programme, incident review and response protocol	Currently complaint- (A and b) a deflagration management plan has been produced. The shredder will be equipped with pressure relief panels.
	b.	Pressure relief dampers	
	c.	Pre-shredding (device)	
28	**Use energy efficiently by keeping the shredder feed stable**		Currently Compliant
MECHANICAL TREATMENT OF WEEE CONTAINING VFCS AND/OR VHCS			
29	**Techniques to prevent, or where not practicable reduce emissions of organic compounds to air. Apply BAT 14d AND BAT14h AND technique a. AND ONE OR BOTH of techniques b. and c.**		
	a.	Optimised removal and capture of refrigerants and oils	Not Applicable
	b.	Cryogenic condensation	
	c.	Adsorption	
	BAT-AELs for channelled TVOC and CFC emissions to air from treatment of WEEE containing VFCs and/or VHCs (mg/Nm3) *Table 6.4. Monitoring requirements are outlined in BAT 8*		
	TVOC	3.0-15	Not Applicable
	CFCs	0.5-10	
30	**Prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs. Use EITHER of the following techniques:**		
	a.	Inert atmosphere e.g. N2	Not Applicable

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	b.	Forced ventilation	
MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			
31	**Reduce emissions to air of organic compounds by applying BAT 14d AND using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	Not Applicable
	b.	Biofilter – see S6.1	
	c.	Thermal oxidation – see S6.1	
	d.	Wet scrubbing – see S6.1	
	BAT-AEL for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value (mg/Nm3) *Table 6.5 and its supporting note. Monitoring requirements are outlined in BAT 8*		
	TVOC	10.0-30.0	Not Applicable
MECHANICAL TREATMENT OF WEEE CONTAINING MERCURY			
32	**Reduce mercury emissions to air by collecting them at source, sending them to abatement and carrying out adequate monitoring. This includes ALL of the following:**		
	Equipment is enclosed, under negative pressure and connected to a LEV system		Not Applicable
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon		
	Monitoring of waste gas treatment efficiency		
	Mercury levels measured at least weekly within treatment and storage areas		

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	BAT-AEL for channelled mercury (Hg) emissions to air from the mechanical treatment of WEEE containing mercury (µg/Nm3) *Table 6.6. Monitoring requirements are outlined in BAT 8*	
	Hg: 2.0-7.0	Not Applicable
	BIOLOGICAL TREATMENT OF WASTE (GENERAL BAT)	
33	**Reduce odour emissions and improve overall environmental performance by selecting the waste input (to ensure its suitability for biological treatment). See also BAT 2**	Not Applicable
34	**Reduce emissions to air of dust, organic compounds and odorous compounds (including H2S & NH3) by using one or a combination of the following techniques:**	
	a. Adsorption – see S6.1 b. Biofilter – see S6.1 c. Fabric filter – see S6.1. d. Thermal oxidation – see S6.1 e. Wet scrubbing – see S6.1	Not Applicable
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the biological treatment of waste (mg/Nm3) (ou_E/m3) *Table 6.7 and its supporting notes. Monitoring requirements are outlined in BAT 8*	
	NH3: 0.3-20 Odour: 200-1000 Dust: 2.0-5.0 TVOC: 5.0-40	Not Applicable
35	**Reduce the generation of wastewater and reduce water usage by using <u>ALL</u> of the following:**	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	a.	Segregation of water streams (see also BAT 19f)	Not Applicable
	b.	Water recirculation	
	c.	Minimisation of the generation of leachate	
BIOLOGICAL TREATMENT OF WASTE: AEROBIC METHODS			
36	**Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:**		
	Waste input characteristics e.g. C to N ratio, particle size		Not Applicable
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)		
	Aeration of the windrow		
	Windrow porosity, height and width		
37	**Reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps. Use <u>ONE OR BOTH</u> of the following techniques:**		
	a.	Use of semi-permeable membrane covers	Not Applicable
	b.	Adaptation of operations to the meteorological conditions	
BIOLOGICAL TREATMENT OF WASTE: ANAEROBIC METHODS			
38	**Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:**		
	Implement a manual and/or automatic monitoring system to:		

BATc number			Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	Ensure a stable digester operation			Not Applicable
	Minimise operational difficulties and associated odour emissions			
	Provide sufficient early warning of system failures			
	Windrow porosity, height and width			
	Monitoring and/or control of key waste and process parameters – examples below:			
	pH and alkalinity of the digester feed			Not Applicable
	Digester operating temperature			
	Hydraulic and organic loading rates of the digester feed			
	Volatile fatty acids and NH3 concentrations within digester & digestate			
	Biogas quantity, composition (e.g. H2S) and pressure			
	Liquid and foam levels in the digester			
MECHANICAL BIOLOGICAL TREATMENT (MBT) OF WASTE				
39	**Reduce emissions to air. Generally applicable to new plants, existing plants may have layout constraints. Use <u>BOTH</u> of the following techniques:**			
	a.	Segregation of the waste gas streams (refer to inventory described in BAT 3)		Not Applicable
	b.	Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.		
PHYSICO-CHEMICAL TREATMENT OF SOLID AND/OR PASTY WASTE				

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
40	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**	
	Monitoring the waste input	
	Content of organics, oxidising agents, metals, salts, odorous compounds	Not Applicable
	H2 formation potential upon mixing of flue-gas treatment residues/ashes with water	
41	**Reduce emissions to air of dust, organic compounds and NH3 by applying BAT 14d AND using one or a combination of the following techniques:**	
	a. Adsorption – see S6.1	Not Applicable
	b. Biofilter – see S6.1	
	c. Fabric filter – see S6.1.	
	d. Wet scrubbing – see S6.1	
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the physico-chemical treatment of solid and/or pasty waste (mg/Nm3) *Table 6.8. Monitoring requirements are outlined in BAT 8*	
	Dust 2.0-5.0	Not Applicable
	RE-REFINING OF WASTE OIL	
42	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**	
	Monitoring the waste input	
	Chlorinated compounds e.g. solvents or PCBs	Not Applicable
43	**Reduce quantity of waste sent for disposal by using ONE OR BOTH of the following techniques:**	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	a.	Material recovery e.g. organic residues in asphalt products	Not Applicable
	b.	Energy recovery	
44	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	Not Applicable
	b.	Thermal oxidation – see S6.1	
	c.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			
45	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	Not Applicable
	b.	Cryogenic condensation – see S6.1	
	c.	Thermal oxidation – see S6.1	
	d.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
REGENERATION OF SPENT SOLVENTS			
46	**Improve overall environmental performance by using <u>ONE OR BOTH</u> of the following techniques:**		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
	a.	Material recovery (by evaporation from distillation residues)	Not Applicable
	b.	Energy recovery e.g. using distillation residues	
47	**Reduce emissions to air of organic compounds by applying BAT 14d AND using a combination of the following techniques:**		
	a.	Recirculation of process off-gases in a steam boiler. Avoid generating PCBs and/or PCDD/Fs	Not Applicable
	b.	Adsorption – see S6.1	
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs	
	d.	Condensation or cryogenic condensation	
	e.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
BAT-AEL FOR EMISSIONS OF ORGANIC COMPOUNDS TO AIR – SECTION 4.5 (RE-REFINING OF WASTE OIL) (PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CV) (REGENERATION OF SPENT SOLVENTS)			
	BAT-AEL for channelled TVOC emissions to air from the re-refining of waste oil, physico-chemical treatment of waste with calorific value and regeneration of spent solvents (mg/Nm3) *Table 6.9 and its supporting note. Monitoring requirements are outlined in BAT 8*		
	TVOC	5.0-30	Not Applicable

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
THERMAL TREATMENT OF SPENT ACTIVATED CARBON, WASTE CATALYSTS AND EXCAVATED CONTAMINATED SOIL			
48	**Improve overall environmental performance by using ALL of the following techniques:**		
	a.	Heat recovery from the furnace off-gas e.g. for preheating combustion air or steam generation	Not Applicable
	b.	Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints.	
	c.	Process-integrated techniques to reduce emissions to air – see examples	
49	**Reduce emissions to air of HCl, HF, dust and organic compounds by applying BAT 14d AND using one or a combination of the following techniques:**		
	a.	Cyclone – see S6.1	Not Applicable
	b.	Electrostatic precipitator (ESP) – see S6.1	
	c.	Fabric filter – see S6.1	
	d.	Wet scrubbing – see S6.1	
	e.	Adsorption – see S6.1	
	f.	Condensation – see S6.1	
	g.	Thermal oxidation – see S6.1	
	Note supporting text for BAT 49g (thermal oxidation) *Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.*		
WATER WASHING OF EXCAVATED CONTAMINATED SOIL			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
50	**Reduce emissions to air of dust and organic compounds from the storage, handling and washing steps by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	Not Applicable
	b.	Fabric filter – see S6.1	
	c.	Wet scrubbing – see S6.1	
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
Decontamination of equipment containing PCBs			
51	**Reduce emissions to air of PCBs and organic compounds and improve overall environmental performance by using <u>ALL</u> of the following techniques:**		
	a.	Coating of the storage and treatment areas – see examples	Not Applicable
	b.	Implementation of staff access rules to prevent dispersion of contamination – see examples	
	c.	Optimised equipment cleaning and drainage – see examples	
	d.	Control and monitoring of emission to air – see examples	
	e.	Disposal of waste treatment residues – see examples	
	f.	Recovery of solvent when solvent washing is used	
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
TREATMENT OF WATER-BASED LIQUID WASTE			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (Only for existing activities within 4 years of publication of BAT conclusions), Not Compliant
52	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**		
	Monitoring the waste input		
	Bioeliminability e.g. BOD, BOD-COD ratio, Zahn-Wellens test, biological inhibition potential		Not Applicable
	Feasibility of emulsion breaking e.g. lab testing		
53	**Reduce emissions to air of HCl, NH3 and organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	Not Applicable
	b.	Biofilter – see S6.1	
	c.	Thermal oxidation – see S6.1.	
	d.	Wet scrubbing – see S6.1	
	BAT-AELs for channelled HCl and TVOC emissions to air from the treatment of water-based liquid waste (mg/Nm3) *Table 6.10 and its supporting notes. Monitoring requirements are outlined in BAT 8*		
	HCl	1.0-5.0	Not Applicable
	TVOC	3.0-20	