

Natural Resources Wales Permitting Decisions

**Industrie Cartarie Tronchetti UK
Limited**

Deeside Paper Mill

Decision Document

Application for a New Bespoke Permit

The application number is: PAN-021584

The Permit Number: EPR/DB3292FS

The applicant /operator is: Industrie Cartarie Tronchetti UK Limited

The Installation is located at: Deeside Paper Mill, Unit C The Airfields Roadside and Retail, Northern Gateway, Welsh Road, Queensferry, Deeside, Flintshire CH5 2RD

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

Contents	3
1. Executive summary	7
1.1. Application summary	7
1.2. Our decision	8
2. Receipt of the application	9
5. Consultation	11
5.1. Consultation on the Application	11
5.2. Draft Permit Consultation	11
6. Requests for information	12
7. The Installation	13
7.1. The permitted activities	13
7.2. What the installation will do / Changes to the installation	14
8. Operation of the installation	14
8.2. Operator competence	14
8.2. Environmental Management System	15
9. The site	17
9.1. Site Plan	17
9.2. Site Condition Report	18
9.4. Site protection: potentially polluting substances and prevention measures ...	18
9.5. Closure and decommissioning	19
10. Environmental Risk Assessment	20
10.1. Assessment of impact on air quality	20
10.2. Assessment of impact to surface and ground water	26
10.3. Emissions to sewer	29
Emission limits	30
10.4. Fugitive emissions	30
10.5. Assessment of odour impact	31
Emission limits	31
10.6. Noise and vibration assessment	31
Emission limits	32
11. Impact on National Site Network Sites, SSSIs and non-statutory sites	33
11.1. The National Site Network	33
11.2. Sites of Special Scientific Interest (SSSI)	35
11.3. Non-statutory conservation sites	35
12. The Permit Conditions	35

12.1.	Incorporating the application	35
12.2.	Emission Limits	36
12.3.	Monitoring	37
12.4.	Reporting	37
12.5.	Raw Materials	38
12.6.	Waste Types	38
12.7.	Pre-operational conditions	38
12.8.	Improvement conditions.....	39
13.	OPRA	39
ANNEX 1:	Pre-Operational Conditions	40
ANNEX 2:	Improvement Conditions.....	42
ANNEX 3:	Consultation Reponses.....	43
1.	Advertising and consultation on the Application	43
2.	Advertising and consultation on the draft decision	44
ANNEX 4:	BAT Assessment	45

Glossary of acronyms and definitions used in this document

AMP – Accident Management Plan

BAT – Best Available Technique(s)

BOD – Biological Oxygen Demand

BAT-AEL – BAT Associated Emission Level

BRef – BAT Reference Note

CIRIA C736 – Containment systems for the prevention of pollution: Secondary, tertiary and other measures for industrial and commercial premises 2014

CHP – Combined Heat and Power

COD – Chemical Oxygen Demand

CRoW – Countryside and Rights of Way Act 2000

DAA – Directly Associated Activity

DAF – Dissolved Air Flotation

DD – Decision Document

ELV – Emission limit value

EMS – Environmental Management System

EPR – Environmental Permitting (England and Wales) Regulations 2016

ETP – Effluent Treatment Plant

HRA – Habitat Regulations Assessment

IBC – Intermediate Bulk Container

IED – Industrial Emissions Directive (2010/75/EU)

NRW – Natural Resources Wales

OPRA – Operator Performance Risk Appraisal

PC – Process Contribution

PEC – Predicted Environmental Concentration

PHW – Public Health Wales

PPS - Public Participation Statement

RGN – Regulatory Guidance Note

RGS – Regulatory Guidance Series

SAC – Special Area of Conservation

SGN – Sector Guidance Note

SMNR – Sustainable Management of Natural Resources

SPA – Special Protection Area

SSSI – Site of Special Scientific Interest

TGN – Technical Guidance Note

TSS – Total Suspended Solids

WFD – Water Framework Directive

1. Executive summary

1.1. Application summary

The application is for a new bespoke permit for the Deeside Paper Mill, located on part of the Northern Gateway Industrial area in Deeside, Flintshire. The site covers approximately 31.45 hectares with the Dee Estuary approximately 0.6Km to the south of the site.

The paper mill is operated by Industrie Cartarie Tronchetti UK Limited and the environmental permit is for the activities of phase 1 and 2 of the installation. Phase 1 consists of pulp storage, bale handling, paper manufacture hall, jumbo rolls storage, converting area, raw materials storage, high bale warehouse, dispatch, effluent treatment plant, chemical storage, Combined Heat and Power (CHP) plant and boiler. Phase 2 comprises of pulp storage, bale handling, paper manufacture hall, jumbo roll storage and CHP plant and boiler.

All paper is produced using prepared virgin pulp which will be delivered to site already prepared. Each paper machine will make around 70,000 tonnes per annum(tpa) of tissue. For phase 1 and 2 this means a total of 140,000 tpa with the two operational paper machines.

The process at the installation includes:

- **Raw Material Storage** – Bales of cellulose are stored in the pulp storage warehouse prior to use in the production of tissue paper. All chemicals are stored in a dedicated area. Gas and water are supplied from mains through pipeline connections.
- **Pulp Preparation** – Cellulose bales are pulped in the pulper and mixed with water and through mechanical action to produce the pulp stock.
- **Pulp Treatment** – Pulped stock is sent through a series of machines to separate out small debris and clumps. Wastewater is sent to the effluent treatment plant.

- **Formation of tissue paper and winding in reels** – Pulp is sent to the paper machine and placed on a wire and felt and excess water drains away to leave a wet fibre sheet. The sheet is transferred to the drying section by the felt where it is pressed and dried using the Yankee dryer, a cylindrical drum heated by steam and hot air generated by hoods above. This dries the sheet to form tissue which is scraped from the drying cylinder using a steel blade to form a crepe which is wound on reels and wrapped for storage in the jumbo reel warehouse.
- **Multi ply formation** – This converts the jumbo reels into tissue products such as toilet rolls or kitchen towels. The jumbo reels are wound and rewound on a converting machine coupling one or more plies together. Then if required cut to size through circular blades to form the final product which is stored prior to dispatch.
- **Heat and Power Generation** – Each paper manufacturing line will consist of a 24.16MWth gas turbine and combustor unit, 15MWth post burner boiler for steam and a 13.6MWth burner on the Yankee hood. Electric heat pumps supply heat to the production hall. There will also be a diesel emergency back up generator. Any excess electrical energy from the CHP plant will be exported to the national grid when available, and imported where there is an on-site shortfall.
- **Effluent Treatment Plant** – Process effluent is treated on site through a number of stages of the plant that include sedimentation / flotation, oxidation / Moving Bed Biofilm Reactor and filtration. The effluent treatment plant produces a sludge which is dewatered and sent off site. The treated water will discharge around 3,456 m³/day to the Dee Estuary.

1.2. Our decision

We are minded to grant the permit for the Deeside Paper Mill operated by Industrie Cartarie Tronchetti UK Limited

We consider in reaching that 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 accepted as duly made on 15/08/2023. 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 the determination.

The application was received on 31/03/2023. In order for us to be able to consider the application duly made, we needed more information. We requested the following:

- Clarification and modelling files around the air quality report;
- Modelling files in support of the noise impact assessment;
- Site boundary and emission point plan for phase 1 and 2;
- Clarifications concerning the water discharge assessment appendix;
- Further information concerning containment.

A letter requesting this information was sent to the applicant on 13/06/2023. Upon receipt of this information, on 15/08/2023, 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 permit will be granted, under Regulation 13 of the Environmental Permit Regulations (EPR). 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 subject to:

- an *installation* as described by the IED;
- Environmental Permitting Regulations 2016 ('EPR')
- The Industrial Emissions Directive 2010 ('IED')
- Water Environment (Water Framework Directive) Regulations 2017
- The Habitats Directive 1992 ('HD')
- The Medium Combustion Plant Directive 2015 ("MCPD")
- The Energy Efficiency Directive 2012 ('EED')
- The Ambient Air Directive 2008 ('AAD')
- The Conservation of Habitats and Species Regulations 2010 ('Habs Regs')
- The Environment (Wales) Act 2016 ('EWA')
- The Human Rights Act 1998 ('HRA')
- The Countryside and Rights of Way Act 2000 ('CRoW')
- The Wildlife and Countryside Act 1981 ('WCA')
- The Well-being of Future Generations (Wales) Act 2015 ('WFG')
- The Natural Resources Body for Wales (Establishment) Order 2012
- The Natural Resources Body for Wales (Functions) Order 2013
- The Public Participation Directive 2003 (PPD)
- The Equalities Act 2010 ('EqA')
- 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, in granting the permit 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.

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.

The advert was also placed on our website from 25/08/2023 to 29/09/2023 which included the 2023 August Bank Holiday.

We also consulted with the following bodies:

- Health and Safety Executive (HSE)
- Public Health Wales (PHW)
- Flintshire County Council (FCC) - Planning Department
- Flintshire County Council – Environmental Health

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly. The consultation started on 05/09/2023 and ended on 25/09/2023.

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 a consultation on our draft decision which began on 20/05/2024 and ended on 18/06/2024. The outcome of this consultation can be found in Appendix 3 of this document.

6. Requests for information

Further information was requested during determination by way of a Schedule 5 Notice requiring the applicant to provide further information relating to air quality and the site condition report. The Schedule 5 Notice was sent on 23/10/2023 with a deadline for response of 16/11/2023.

No extension request was made by the applicant however a response to the Schedule 5 Notice was provided on 27/11/2023. The additional information supplied satisfied the requirements of the Schedule 5 Notice.

A second Schedule 5 Notice for further information was sent on 18/01/2024 with a deadline for response of 18/02/2024. The further information request related to the disposal of boiler blow down, options appraisal for the proposed discharge from to the River Dee from the ETP and total thermal input of the associated medium combustion plant. Again, no extension request was made but further information was provided on 20/02/2024 which we considered satisfied the request of the Schedule 5 Notice.

A third Schedule 5 Notice for further information was sent on 21/02/2024 with a deadline for response of 18/03/2024. The further information request related to the H1 assessment submission, marine discharge assessment and the maximum process effluent flow. A response to the Schedule 5 was made on 20/03/2024 which we considered satisfied the request of the Schedule 5 Notice. Further information was also provided on e-mail 23/05/2024, 24/05/2024 and 06/06/2024.

Informal requests for information were made via email relating to air quality and the site condition report submission. These were later followed up by the Schedule 5 Notice on 23/10/2023.

A copy of the information notices and e-mails requesting further information were placed on our public register as were the responses when received.

7. The Installation

7.1. The permitted activities

The regulated facility will be an installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations:

- S6.1 A1 (b) Producing, in industrial plant, paper and board where the plant has a production capacity of more than 20 tonnes per day.
- S1.1 A (1) (a) burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.
- S5.4 A1(a)(i) Disposal of non-hazardous waste with the capacity exceeding 50 tonnes per day involving one or more of the following activities (i) biological treatment.

The installation is also subject to Schedule 25A of EPR – Medium Combustion Plant Directive (MCPD) for the following:

- 2 x 24.16 MWth natural gas turbine/combustor units or combined heat and power plants;
- 2 X 15MWth boilers to provide steam for each phase 1 and 2

These are all classed as new medium combustion plant by way of the legislation as they will be put into operation after the 20 December 2018 date for existing plant.

The following are deemed out of scope of the Medium Combustion Plant Directive (MCPD) as they are classed as 'direct driers' within the process:

- 2 X 6.8MWth (natural gas fired) burners to supply heat to the Yankee hood for both phase 1 and 2.

In the original design for this new bespoke permit the application outlined 2 x 1.35MWth gas fired boilers to provide heat to the production halls (emissions points A1 and A2). Following operator review further information was provided to replace the 2 x 1.35MWth gas fired boilers with 6 x 208kWth electric heat pumps (removing A1 and A2). This was a late change to the application for this new installation but involved environmental benefits to the original design so was accepted.

The specified generator regulations do not apply to Chapter II Industrial Emissions Directive installation sites. The MCPD regulations however also apply here and the emission limit values (ELVs) set out in the directive need to be met as a minimum standard. Where site specific BAT applies and there is a need for tighter ELVs to

protect air quality these are applied to the permit. See below in the discussion on the air quality assessment and emission limits.

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

- Chemical storage and handling
- Surface Water Discharge
- Raw Material Storage
- Waste Storage and handling

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

7.2. What the installation will do

This new installation is a paper mill that will manufacture tissue paper namely toilet roll and kitchen towel from already prepared virgin pulp. The mill will consist of two manufacturing lines (phase 1 and phase 2). Each line will have a paper machine that has an annual capacity to manufacture 70,000 tonnes of tissue giving a total capacity of 140,000 tonnes per year. Any waste pulp produced will be re-used back within the process to minimise waste. Each line also has an associated combined heat and power plant (CHP). A biological effluent treatment plant (ETP) will serve both manufacturing tissue lines for the processing of effluent streams prior to discharge to the Dee Estuary. Storage and conversion of the manufactured ‘jumbo’ tissue rolls from each paper machine will take place on the site. The main raw materials will be natural gas for heat and power and mains water will be used for pulp preparation and steam production.

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 permit is granted; and that they will be able to operate the Installation so as to comply with

the conditions included in the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator¹.

Relevant Convictions

The applicant has declared they have no relevant convictions. NRW's COLINS Database has been checked to confirm there are no relevant convictions.

No relevant convictions were found.

Financial Provision

The applicant has declared they have no current or past bankruptcy or insolvency proceeding against them.

There is no known reason to consider that the operator will not be financially able to comply with the permit. The decision was taken in accordance with RGN 5 on Operator Competence.

The operator satisfies the criteria in RGN 5 on Operator Competence².

8.2. Environmental Management System

The applicant has stated in the application that they will implement an Environmental Management System (EMS) that will meet the requirements for an EMS in our "How to comply with your environmental permit" guidance³.

Industrie Cartarie Tronchetti UK Limited has implemented and maintains an ISO14001 accredited EMS for its existing mills. The operator has committed to a site-specific EMS that will follow the principles of ISO14001 and will work towards certification. The operator has also committed to the EMS development prior to commissioning and operation of the mill and will be prepared following the EA guidance (Develop a

¹ [RGN 1 Understanding the meaning of 'operator' \(naturalresources.wales\)](https://naturalresources.wales/guidance/1-understanding-the-meaning-of-operator)

² [regulatory-guidance-note-5-operator-competence.pdf \(naturalresources.wales\)](https://naturalresources.wales/guidance/regulatory-guidance-note-5-operator-competence.pdf)

³ [Natural Resources Wales / Guidance to help you comply with your environmental permit](https://naturalresources.wales/guidance/how-to-comply-with-your-environmental-permit)

management system: environment permits). This commitment has therefore been included in the pre-operational conditions of the permit.

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.

Accident management

The EMS will include an Accident Management Plan which the applicant has stated will be in place prior to operation. A pre-operational condition (PO2) concerning the EMS has been included to ensure this commitment is met prior to the operation of the mill.

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

8.3. 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 Best Available Techniques conclusions (BATc) which for an installation of this type is. BAT Conclusions for the production of pulp, paper and board in the Official Journal of the EU on 30/09/2014. Please refer to Annex 4 in this decision document where a table outlines the specific BATc that apply to this installation and the assessment made against them.

We have reviewed the techniques proposed and consider them to represent BAT at this installation.

We have specified in Schedule 1 Table S1.2 operating techniques outlined in key documents that are linked to the permit through permit condition 2.3.2.

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 is used as efficiently as possible.

The operator is required to report on the performance parameters that include raw material usage under the conditions in section 4.2 and Schedule 4 of the permit. This will enable NRW to ensure that the efficient use of raw materials occurs and is demonstrated by the operator.

Avoidance, recovery or disposal of wastes produced by the activities

Any waste pulp will be reused within the process, however operational wastes will be managed through a waste management plan.

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

We are satisfied that waste from the Installation 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

9.1. Site Plan

The paper mill will occupy part of the Northern Gateway Industrial area in Deeside, Flintshire, North Wales. The mill is centred around National Grid Reference (NGR) SJ 32056 69754.

The applicant has provided a plan which we consider is satisfactory, showing the extent of the site of the facility and its emission points. A plan is included in Schedule

7a of the Permit, and the Operator is required to carry on the permitted activities within the installation boundary as shown in green on the plan.

Emission points to water are labelled on the plan in Schedule 7a and shows the discharge point to the River Dee. An additional 'Emission Plan' has been added in Schedule 7b to the consolidated permit that shows the release points around the permitted installation.

9.2. Site Condition Report

The applicant has provided a description of the condition of the site in a Site Condition Report. We have reviewed this and consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports – guidance and templates (H5)⁴.

The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the installation and at cessation of activities at the installation. The applicant referenced the Environment Agency as the regulator within the application submission, so a re-submission was made in response to Schedule 5 of 18/01/2024 and this is linked to the permit through Table 1.2 Operating techniques.

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. This is delivered through condition 3.1.3.

9.5. Site containment and pollution prevention measures

An environmental risk assessment was provided by the applicant and has been reviewed by NRW in support of the application. The assessment identifies the potential hazards on site along with the pathways and receptors.

⁴ [Environmental Permitting Regulations , Guidance for applicants H5, Site Condition Report, Guidance and Template \(naturalresources.wales\)](#)

It is recognised that this application is for a new bespoke permit and containment measures are yet to be constructed. The applicant has outlined that containment measures will meet CIRIA guidance C736 'Containment Systems for the Prevention of Pollution'. Table 3.4 of the permit application document 'ICT Deeside Environmental Risk Assessment' 2 dated 13 March 2023 outlines the commitments made by the applicant through risk management. This has been included in the operating techniques of the permit. An example of this includes chemical storage including deliveries where the site will have a dedicated chemical store with impermeable surfaces and sealed drainage. Any containers larger than 1m³ will have spill trays with larger containers stored in bunded areas that will conform to CIRIA guidance to contain any leaks and spills.

This aspect of the permit was further explored in a letter for information at the duly making stage of this application. In response the applicant outlined that shut-off valves will be installed at all inlets to the surface water emission points around the site. This will also provide containment to avoid any discharge to the Dee Estuary. An associated pre-operational condition (PO5) has been included in the permit to ensure the commitment to meet CIRIA C736 for containment systems are met and shut-off valves are in place along with the relevant operating procedures linked to the site EMS.

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

9.6. Closure and decommissioning

Permit condition 1.1.1 requires the Operator to have a written management system in place which identifies and minimises risks of pollution, including those arising from closure.

At the definitive cessation of activities, the operator has to satisfy NRW that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the operator would need to submit an application to

NRW for surrender. The determination of such application would assess whether the requirements for surrender have been met and would not be granted until NRW is satisfied that is the case.

10. Environmental Risk Assessment

In line with our guidance, the applicant has provided an environmental risk assessment in support of the application which identifies the risks posed by the installation and the potential pathways and receptors. This risk assessment and further assessments provided by the applicant or completed by NRW is discussed below.

10.1. Assessment of impact on air quality

A methodology for risk assessment of point source emissions to air, is used to assess risk for the permit application we received, is outlined in Environment Agency guidance 'Air Emissions Risk Assessment for your Environmental Permit' and includes the following steps:

- i) Describe emissions and receptors
- ii) Calculate process contributions
- iii) Screen out insignificant emissions that do not warrant further investigation
- iv) Decide if detailed air modelling is needed
- v) Assess emissions against relevant standards
- vi) Summarise the effects of emissions

The methodology uses a concept of process contribution (PC) which is the estimated contribution of emitted substances, after dispersion into the receiving environmental media at the point where the magnitude of the concentration is greatest.

The methodology provides a simple method of calculating PC primarily for screening purposes and for estimating process contributions where environmental consequences are relatively low. It is based on using dispersion factors.

These factors assume worst case dispersion conditions with no allowance made for thermal or momentum plume rise and so the process contributions calculated are likely to be an overestimate of the actual maximum concentrations.

More accurate calculation of process contributions can be achieved by mathematical dispersion models, which consider relevant parameters of the release and surrounding conditions, including local meteorology – these techniques are expensive but normally lead to a lower prediction of PC.

Use of Air Dispersion Modelling

For complex applications, we normally require the Applicant to submit a full air dispersion model as part of their application. Air dispersion modelling enables the process contribution to be predicted at any environmental receptor that might be impacted by the plant.

Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Standards (ES). ES are described in the Environment Agency (Gov.uk) web guide 'Air emissions risk assessment for your environmental permit'.

PCs are screened out as Insignificant if:

- the long-term process contribution is less than 1% of the relevant ES; and
- the short-term process contribution is less than 10% of the relevant ES.

The long term 1% process contribution insignificance threshold is based on the judgements that:

- It is unlikely that an emission at this level will make a significant contribution to air quality;
- The threshold provides a substantial safety margin to protect health and the environment.

The short term 10% process contribution insignificance threshold is based on the judgements that:

- spatial and temporal conditions mean that short term process contributions are transient and limited in comparison with long term process contributions;
- the threshold provides a substantial safety margin to protect health and the environment.

Where an emission is screened out in this way, we would normally consider that the Applicant's proposals for the prevention and control of the emission to be BAT. That is because if the impact of the emission is already insignificant, it follows that any further reduction in this emission will also be insignificant.

However, where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant.

For those pollutants which do not screen out as insignificant, we determine whether exceedances of the relevant ES are likely. This is done through detailed audit and review of the Applicant's air dispersion modelling taking background concentrations and modelling uncertainties into account.

Whether or not exceedances are considered likely, the application is subject to the requirement to operate in accordance with BAT. We also take into account local factors (for example, particularly sensitive receptors nearby such as SSSIs, SACs or SPAs). These additional factors may also lead us to include more stringent conditions than BAT.

If, as a result of reviewing the risk assessment and taking account of any additional techniques that could be applied to limit emissions, we consider that emissions would cause significant pollution, this would lead to application refusal.

Assessment of Applicants Air Dispersion Modelling

For this proposal the applicant's assessment of the impact on air quality is outlined in 'Cundall report: ICT Paper Mill Air Quality Modelling Doc Reference ICT-CDLL-XX-RP-AQ-040 Revision P05 24 November 2023'. This part of the decision document should be read in conjunction with this document.

The assessment comprises of:

- Dispersion modelling of emissions to air from the operation of the entire installation.
- A study of the impact of emissions on nearby sensitive receptors, including human receptors and habitat / conservation sites.

The applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon human health in line with relevant guidance⁵.

The air impact assessments, 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 applicant used ADMS-Roads Extra (version 5.0.1.3) to model predicted 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 will be discussed separately below.

Point source emissions to air from the installation originate from various plant namely, combustion, wet scrubbers, bag filters and process driers on the production line where the gases are excited through dedicated stacks. Bag filter for dust extraction and on-site abatement of particulate matter operates in various locations. The main pollutants released to air are:

- i) oxides of nitrogen (NO_x) and carbon monoxide (CO) from the natural gas fired combustion plant.
- ii) Particulate Matter (PM₁₀ and PM_{2.5})

⁵ [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

The consultant states that NO_x emission rates for the Cogeneration and Cogeneration By-pass stacks have been calculated based on actual volumetric flow rate. The provided actual oxygen content indicate this approach is likely to be conservative.

Consideration of Key Pollutants

Nitrogen Dioxide

The impact on air quality from NO₂ emissions has been assessed against the ES of 40 µg/m³ as a long-term annual average and a short-term hourly average of 200 µg/m³. The model assumes a 70% NO_x to NO₂ conversion for the long term and 35% for the short-term assessment in line with Environment Agency guidance on the use of air dispersion modelling.

At sensitive receptor locations the maximum predicted long-term PC was found to be <1 % and the long-term PEC was <70 % of the long-term critical level. Therefore, in accordance the long-term impacts from NO₂ can be considered as insignificant.

At sensitive receptor locations the maximum predicted short-term PC was <10 % of the short-term critical level. Therefore, the short-term impacts from NO₂ can be considered insignificant. For the operation of both phase 1 and phase 2 the maximum short-term predicted environmental concentration was well below the short term hourly average of 200 µg/m³. All sensitive receptor locations were found to be <10% predicted impact and deemed insignificant.

Particulate Matter

The impact on air quality from particulate emissions has been assessed against the ES for PM₁₀ (particles of 10 microns and smaller) and PM_{2.5} (particles of 2.5 microns and smaller). For PM₁₀, the ES are a long-term annual average of 40 µg/m³ and a short-term daily average of 50 µg/m³. For PM_{2.5} the ES of 20 µg/m³ as a long-term annual average Limit Value from the Ambient Air Directive has been used.

The submitted report references monitoring data to justify the PM₁₀ Emission Limit Values (ELVs) used for the wet scrubbers, and manufacturer assumptions to justify

the PM₁₀ ELVs for the dry filters. For the assessment of PM_{2.5} the consultant has assumed that PM_{2.5} emissions are 100% of PM₁₀ emissions, this approach is conservative in assessment terms.

In conducting air dispersion modelling as part of the Environmental Impact assessment and comparing the predicted environmental concentrations with European and national air quality standards, the Applicant has effectively made a health risk assessment for pollutants. These air quality standards have been developed primarily in order to protect human health.

The Applicant's assessment of the impact from the pollutants listed above, have all indicated that the Installation emissions screen out as insignificant; where the impact of emissions has not been screened out as insignificant, the assessment still shows that the predicted environmental concentrations are within air quality standards or environmental action levels.

No Air Quality Management Areas (AQMAs) have been declared within an area likely to be affected by emissions from the installation.

Emission limits

The aim of the Industrial Emissions Directive (IED) is to prevent or where that is not practicable, to reduce emissions to air, water and land and to prevent the generation of waste, to achieve a high level of protection of the environment taken as a whole. The IED achieves this aim by setting operational conditions, technical requirements and emission limit values to meet the requirements set out in Articles 11 and 18 of the IED. These requirements include the application of Best Available Techniques (BAT).

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 the environment and human health.

We have decided that emission limits should be set for the parameters listed in the permit in line with BAT conclusions for pulp paper and board (2014/687/EU) and the MCPD limits where appropriate.

10.2. Assessment of impact to surface and ground water

The proposal includes a direct discharge to the River Dee of process effluent from the effluent treatment plant (W1) and a number of clean uncontaminated surface water discharges (W2 to W6).

It was agreed at the pre-application stage that a representative proxy mill data set could be used for the W1 assessment. The proxy mill is operational and one in the operator's portfolio that uses comparable plant, to that proposed for the Deeside Paper mill. The applicant completed the risk assessment using the comparable data set in line with the relevant guidance *Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk)*. This section of the decision document should be read in conjunction with Arcadis report 'Marine Discharges Assessment Revision 03'.

It is noted that the proxy mill intake water had a high nutrient content. Through further discussions with NRW, it was agreed that this part of the data set was not representative and could be excluded from the assessment. Unlike this proposal, the proxy mill is situated in an intensive agriculture region which gave rise to a high Dissolved Inorganic Nitrogen (DIN) in the data set used in the initial assessment. The water supply for this proposed new paper mill is mains water from Dwr Cymru Welsh Water Ashgrove water treatment works. Although the raw water is abstracted from the River Dee at Heronbridge, the paper manufacturing process will not be contributing to any additional source of DIN which in turn is returned to the River Dee.

The applicant used the recognised H1 screening tool and associated methodology for the assessment of the proposed discharge to the receiving water body. The first screening test in the tool checks if the concentration of the pollutant in the proposed discharge, is more than the environmental quality standard (EQS). For screening test two a dilution factor is introduced by way of the receiving water body or background, using river flow data and daily discharge. The test checks if the process contribution (PC) of the pollutant is more than 4% of the EQS. There is no requirement to conduct a screening test beyond two if the PC is <4%.

The results of the H1 screening test for both phase 1 and 2 combined in the discharge from the proposed paper mill, passed the screening test at stage two. No further assessment using test three and four is required or further modelling as a result.

Temperature

There are currently no statutory thermal standards for estuaries and for estuary and coastal waters. Regulatory controls therefore look at the individual thermal discharges to ensure that the extent of the mixing zone allows the ecology to meet the objectives of the Water Framework Directive (WFD). There are however criteria that need to be considered for predicting the mixing zone for thermal discharge in estuaries. The applicant was advised by NRW as statutory consultees on the planning that for a release to water with elevated temperature the applicant would need to show the size of the mixing zone at 23°C and 3°C uplift (freshwater UKTAG (WFD) standards for 'Good' status for non-cyprinids to define the extent of the mixing zones for thermal discharges in TraC waters). It was also advised that the different seasons and background temperatures should also be considered. For this assessment numeric modelling is conducted to predict the size of the mixing zone.

Despite there being no temperature standards for estuaries and coastal waters the following standards from the Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 were considered in the decision making process and have been replicated below for ease of reference. The point of discharge from the proposed mill is tidal where the River Dee meets the Dee Estuary. The River Dee is a Highly Modified Water Body (HMWB) and has an overall water body status of moderate.

Table 6

Temperature standards for rivers (rivers categorised by type in accordance with paragraph 1(2) of Schedule 2)								
<i>River temp type</i>	<i>High</i>		<i>Good</i>		<i>Moderate</i>		<i>Poor</i>	
	<i>Salmon id</i>	<i>Cypri nid</i>						
River temp (°C) as an annual 98-percen-tile standard	20	25	23	28	28	30	30	32
Increase or decrease in temp (°C) in relation to the ambient river temp, as an annual 98 percentile standard ⁽ⁱ⁾	2	2	3	3	-	-	-	-

⁽ⁱ⁾ The high and good standards specified for the increase or decrease in temp must not be used for the purpose of classifying the status of bodies of surface water except where the water receives consented thermal discharges.

The applicant submitted a 1D hydrodynamic and temperature model of the Dee estuary using HEC RAS software. The results from the model are outlined in the above mentioned 'Marine Discharge' report and was reviewed by NRW specialist marine advisors. From the results of the hydrodynamic modelling the predicted temperatures were found to be far removed and much lower than the 23°C and 3°C uplifted. NRW is satisfied that any temperature impact due to the predicted modelling and volume of the discharge to the receiving water body would be insignificant. At this time there is inadequate information to link ecology to a complex thermal structure created by thermal gradient. As a protective measure however an absolute maximum temperature limit has been included in the permit rather than an average. The justification for this being that the receiving body is a European Designated Special Area of Conservation (SAC), and a precautionary approach is warranted.

An NRW Water Framework Directive Compliance Assessment report form was completed which concluded that the activity is considered, as having no risk of causing deterioration or preventing any water body or WFD Protected Area from reaching its objectives.

There are a number of clean uncontaminated surface water discharge points around the site (W2 through to W6) which have been included in Schedule 3 Table 3.2. There are also discussions around this under containment and the use of shut-off valves to protect the River Dee in the event of an incident or accident. A daily visual spot check for any oil or grease has been added to the permit to ensure that any issue is detected, and the appropriate action is taken in line with the sites EMS. Emission points W2 to

W6 are for uncontaminated surface water only and there should be no visible oil or grease.

Emission Limits

We have decided that emission limits should be set for the parameters listed in the permit. The aim of the Industrial Emissions Directive (IED) is to prevent or where that is not practicable, to reduce emissions to air, water and land and to prevent the generation of waste, to achieve a high level of protection of the environment taken as a whole. The IED achieves this aim by setting operational conditions, technical requirements and emission limit values to meet the requirements set out in Articles 11 and 18 of the IED. These requirements include the application of Best Available Techniques (BAT).

We have decided that emission limits should be set for the parameters listed in the permit in line with BAT conclusions for pulp paper and board (2014/687/EU).

An annual total suspended solids (TSS) figure per tonne of paper produced in line with BAT conclusions for pulp, paper and board. However, a figure for TSS has also been included as a precautionary measure to ensure no deterioration of the receiving water body which is also a SAC. The limit was set in line with a receiving transitional water where a higher level of suspended solids can be tolerated above that of a freshwater River. The ELV included in the permit is BAT for treatment of all water-based liquids from wastewater treatment to receiving waters. The applicant had also committed to daily monitoring of TSS in the BAT gap analysis.

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 operator has indicated that there will be no emissions to sewer from the process. Further information was requested due to the close proximity of the mains sewer that transects the installation boundary. Also, no options criteria or appraisal was provided

in the supporting document regarding the proposal for a discharge to the River Dee over mains sewer. Further information was provided by the applicant in response to the second Schedule 5 Notice. To summarise, as a result of the proposed flows from phase 1 and 2 of the paper mill, a discharge volume of 40l/s would arise. The main sewer within the vicinity of the mill only has the capacity for a flow of 12l/s. The applicant advised that this was raised during the proposed purchase and planning stages of the project which led to the proposal for discharge W1. All domestic sewage from the site office facilities will however discharge to main sewer.

10.4. Fugitive emissions

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

- Leaks and spills from external storage areas
- Dust
- Volatile Organic Carbons (VOCs) from oil/diesel storage

The application details measures which will be in place for preventing and minimising fugitive emissions. Namely procedures linked to the site's EMS to minimise the risk of fugitive emissions. All liquids with the potential to cause pollution will be stored in appropriate containers and with suitable secondary containment. Table 3.4 submitted by the applicant in the Environmental Risk Assessment outlines the measures that will be in place to minimise fugitive emissions. NRW has linked the measures that will be adopted to the permit through the operating techniques listed in the permit to ensure that they are in place once the installation is built and operational.

Dust can be an issue at paper mills which can lead to build up in high places and settle on ducting for example, becoming a fire risk. It is acknowledged that that a dust abatement system will be in place and visual checks will be undertaken external to the mill. It is also important however that it is managed internally which has not been addressed in the submitted risk assessment. The consideration of internal dust management has therefore been added to pre-operational measure PO2 (EMS). It is considered that the permit conditions outlined below are suitable.

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.

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 shall be developed if pollution is subsequently identified.

10.5. Assessment of odour impact

There are sensitive receptors within the vicinity of the installation. Namely residential properties at Garden City some 375m to the South-East, Deeside Industrial Park approximately 200m to the North and Tata Steel Shotton approximately 750m to the West.

The applicant has identified the primary potential source of odour which could be the effluent treatment plant. A qualitative odour screening assessment was undertaken and submitted by the applicant. It is noted that the effluent treatment facility will be within an enclosed dedicated building located to the north of the site and farthest away from the residential receptors and behind the main taller mill buildings. The effluent from a mill is generally homogenous and does not come from a particularly odorous source. It is considered therefore that there is a low potential for odour and this is in line with similar operational installations. Abatement on the treatment plant will also be in place namely deodorised activated carbon filters and enclosed primary and secondary tanks. 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 odour.

Condition 3.3.1 in the permit will also require 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. Namely residential properties at Garden City some 375m to the South-East, Deeside Industrial Park approximately 200m to the North and Tata Steel Shotton approximately 750m to the West. Furthermore, the operator included future residential development in the proposal which is planned adjacent to the mill boundary.

The operator provided a noise impact assessment (NIA) 'Cundall ICT Paper Mill Northern Gateway – Noise Impact Assessment – Environmental Permitting Report' and associated noise modelling using SoundPLAN 8.2 software using the ISO 9613-2 methodology to predict the noise rating level at sensitive receptors, which has been reviewed by NRW noise specialist.

The primary noise source is expected to be from the large processing machines or in the paper mill halls (PM 1 and PM2). Other identified sources include exhaust noise from stacks and flues. Source measurements were used from a proxy mill that utilises the same equipment proposed for this installation. It is noted in the supporting risk assessment that operations will take place within a building which reduces the potential for noise outside of the site. Building doors and openings will be kept closed at all times. Stacks are designed to discharge vertically resulting in sound directional losses at nearby receptors and this was incorporated into the noise modelling. Stacks will also have silencers fitted to minimise noise and this have been outlined in the NIA.

Through our assessment of the information submitted in respect of noise and vibration NRW considers is in agreement with the conclusions that prediction of noise impacts is not likely to cause an adverse or significant adverse impact at the identified receptors.

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.

Also, a noise pre-operational condition (PO4) and improvement condition (IC2) have been included in the permit. This follows advice from NRW noise specialists on review of the noise impact assessment submitted by the applicant. The pre-operational condition ties in the commitment by the applicant to two pieces of mitigation considered within the modelling submitted with the noise impact assessment. These mitigation measures have been outlined in the pre-operational condition so have not been replicated here. Furthermore, improvement condition IC2 has been added once the mill is at routine steady operation. This is to ensure that the operator undertakes a noise impact assessment and produces an associated report for submission to NRW for approval. This is to ensure that once operational that any noise generated from the installation is not having an adverse impact and it reflects the conclusions and assumptions made in the noise impact assessment and associated modelling.

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

The applicant has used the relevant screening distance criteria to identify relevant protected conservation sites which could be at risk from the proposal. A screening distance of 2Km was used which we are in agreement with.

A full assessment of the application and its potential to affect the identified sites identified has been conducted 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:

River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) (England) (SAC) (UK0030252)

Dee Estuary / Aber Dyfrdwy (Wales) (England) (SAC) UK0030131

Deeside and Buckley Newt Sites (SAC) (UK0030132)

The Dee Estuary (SPA) (Wales) (England) UK9013011

The Dee Estuary (Ramsar) (Wales) (England) UK11082

A Habitat Regulations Assessment (HRA) was completed to assess the potential to affect any of the sites identified. The project was screened for likelihood of significant effects and, taking account of the advice received from NRW's protected sites advisors, is considered unlikely to have a significant effect on any National Site Network site (as documented in section 3.2 of OGN 200 Form 1, or section 5 if applicable). The full assessment is available to view on the public register.

In brief where a potential impact pathway was identified this was taken through to appropriate assessment for the following:

River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) (England) (SAC), Dee Estuary / Aber Dyfrdwy (Wales) (England) (SAC) and Deeside and Buckley Newt Sites (SAC).

For the River Dee the section on emissions to water should also be considered as an H1 assessment was submitted by the applicant and reviewed by NRW. A WFD assessment was also completed, and this can also be found on the NRW public register.

Dee Estuary / Aber Dyfrdwy (Wales) (England) (SAC) a long-term critical level of 30 $\mu\text{g}/\text{m}^3$ NO_x (annual) and short-term critical level of 75 $\mu\text{g}/\text{m}^3$ NO_x (24-hourly) has been assumed for the Dee Estuary SAC. The maximum long-term process contribution (PC) is 0.1 $\mu\text{g}/\text{m}^3$ and <1% (0.2 %) of the long term critical level and maximum short-term PC is 1.7 $\mu\text{g}/\text{m}^3$ and <10 % (2.3 %) of the short-term critical level, therefore impacts from airborne NO_x emissions can be screened out as insignificant.

APIS has confirmed that the appropriate CLo range for Coastal is 20-30KgN/ha/ya. The predicted process contribution is considered to be <0.01% and 0.03 of the lower CLo and 0.02% of the higher CLo. It can be concluded it screens out as insignificant.

Deeside and Buckley Newt Sites (SAC) A long-term critical level of 30 $\mu\text{g}/\text{m}^3$ NO_x (annual) and short-term critical level of 75 $\mu\text{g}/\text{m}^3$ NO_x (24-hourly) has been assumed for the SAC. The maximum long-term process contribution (PC) is <0.1 $\mu\text{g}/\text{m}^3$ and <1%

(0.1%) of the long term critical level and maximum short-term PC is 1.5 µg/m³ and <10 % (2.1 %) of the short-term critical level, therefore impacts from airborne NOx emissions can be screened out as insignificant.

11.2. Sites of Special Scientific Interest (SSSI)

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

Afon Dyfrdwy / River Dee, SSSI Code: 31WDW (Map 38)

River Dee, SSSI (England)

Dee Estuary, SSSI Code 31 WHJ

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 assessment concluded that the proposed permission is not likely to damage any of the flora, fauna or geological or physiological features which are of special interest.

A copy of the assessment is available to view on the public register.

11.3. Non-statutory conservation sites

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

- River Dee Local Wildlife Site
- Shotton Works Local Wildlife Site

Based upon the information in the application we are satisfied that there will be no adverse impact to the non-statutory conservation sites identified.

12. The Permit Conditions

12.1. Incorporating the application

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 in the permit.

12.2. 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.

Point Source Emissions to Air

We have decided that emission limits should be set for the parameters listed in the permit. The following emission limits for point source emissions to air have been set for the main combustion sources.

The emission limit values have been set in accordance with the air dispersion modelling submitted in support of this application. For the combustion sources which are also captures by Schedule 25A of the Medium Combustion Plant Directive the limits have been set in line with the values outlined in the legislation for the type of plant and fuel used.

Point Source Emissions to Water

We have decided that emission limits should be set for the parameters listed in the permit. The emission limit values in the permit have been set out in line with the BAT-

AELS for pulp, paper and board and that modelled by the applicant for the discharge at W1.

It is considered that the ELVs included in the permit in line with the associated legislation and BAT conclusions for the pulp paper and board industry will ensure that significant pollution of the environment is prevented and a robust high level of protection for the environment is secured. Please also consider the sections under assessment of impacts on emissions to

Point Source Emissions to Sewer

There are no point source emissions to sewer as part of the process.

12.3 Monitoring

We have decided that monitoring should be conducted 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 implement the monitoring frequencies and methods specified as BAT in the Pulp, Paper and Board BAT conclusions;
- to demonstrate compliance with the emissions limits in the permit for air and water and to enable correction of measured concentration of substances to the appropriate reference conditions.

Permit condition 3.5.3 requires the operator to employ MCERTS certification or accreditation for monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme, unless otherwise agreed in writing.

12.4 Reporting

We have specified the reporting requirements in Schedule 4 of the permit. This will ensure data is reported, to enable timely review by NRW, to ensure compliance with

permit conditions and to monitor the efficiency of material use and waste recovery at the installation.

12.5 Raw Materials

We have not specified limits and controls on the use of raw materials and fuels. We have however acknowledged in Table 2.1 main raw materials which are water and natural gas.

12.6 Waste Types

BAT for avoidance, recovery and disposal of waste. Having considered the information submitted in the application we are satisfied that waste production will be avoided as far as possible and where waste is produced it will be recovered unless technically and economically impossible. Wastes produced directly by the process will be limited to those associated with maintenance of process equipment. Segregation will be instigated for wastes as outlined in section 2.10 of the supporting document linked to the operating techniques in the permit.

Article 4 of the Waste Framework Directive sets out a hierarchy of options for dealing with waste in decreasing order of preference, with prevention being the most preferable and disposal being the least. Permit conditions under 1.4 is associated with Article 4 of the Waste Framework Directive. As this is not a waste operation or process no further waste type descriptions and quantities were added to the permit.

The waste reporting condition 4.2.5 has however been included as some of the process waste generated on site may be exported, this enables a record to be kept in line with NRW approach.

12.7 Pre-operational conditions

Based on the information in the application, we consider that we need to impose pre-operational conditions. Details of the pre-operational conditions used can be found in Annex 1.

The inclusion of the pre-operational conditions has been discussed throughout the body of the text of this decision document however a consolidated list can be found in the Annex 1 below for ease of reference.

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

The inclusion of the improvement conditions has been discussed throughout the body of the text of this decision document however a consolidated list can be found in the Annex below for ease of reference.

13 OPRA

The agreed OPRA score at the installation is 178.

ANNEX 1: Pre-Operational Conditions

The following table of pre-operational measures has been included in the permit and the decision for their inclusion discussed in the body of the text of this document.

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
PO1	<p>Prior to the operation of the paper mill a written commissioning plan (including timelines for completion) shall be submitted to Natural Resources Wales (NRW) for approval. The commissioning plan shall include but not be restricted to:</p> <ul style="list-style-type: none"> – The timetable for the commissioning of the effluent treatment plant (ETP), combined heat and power plants (CHP) and paper machines (PM1 & PM2) . – The expected emissions to the environment during each of the stages of commissioning; – The mitigation measures that will be taken in respect of emissions to the environment during each stage; – The expected duration of commissioning activities; – Any additional (beyond that required by the Permit) monitoring to be undertaken; <p>Commissioning shall be carried out in accordance with the commissioning plan as approved.</p>
PO2	<p>Prior to the operation of the installation a written Environment Management System (EMS) shall be developed in line with the BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council for the production of Pulp, Paper and Board. The operator is also directed to NRW guidance 'How to comply with your environmental permit in respect of this pre-operational condition and a summary of the EMS shall be submitted to NRW prior to operation. Operator to ensure procedures for dust management in internal areas of the mill are included as only outside operational areas was considered in the sites risk assessment.</p>
PO3	<p>Prior to operation a report shall be submitted to NRW demonstrating that the necessary procedures are in place for the operation of each new medium combustion plant (MCP). The report shall include the MCPD identifier (Identifier - the MCP must be traceable via a serial number or unique identifier, name plate, manufacturer and or/model) response to Schedule 8 Annex1 point 7 for the back-up generator and the National Grid reference (NGR) for each 'MCP' as shown on the emission plan in Schedule 7b (also note IC4).</p>
PO4	<p>Following the completion of the mitigation measures outlined in the noise impact assessment (Receptor B - 2.6m high earth bund with 1.4m high acoustic barrier positioned on top running along the full boundary extent with the WG road. Receptor C a minimum 2.5m high acoustic barrier along the boundary extent with the WG road). A written report shall be submitted to Natural Resources Wales for approval confirming that the mitigation measures have been installed in line with those used in the noise impact assessment modelling.</p>

Table S1.4 Pre-operational measures

Reference	Pre-operational measures
PO5	<p>Prior to operation a report shall be submitted to NRW demonstrating that the containment systems constructed on site meet the commitment made by the operator to meet CIRIA guidance C736 'Containment systems for the prevention of pollution'. The report shall include but not be limited to:</p> <ul style="list-style-type: none">• A CIRIA risk assessment.• Outline where the containment measures have been linked to the sites Environment Management System (EMS)• Demonstration of the installation of 'shut-off' vales on the surface water discharge points to the River Dee• Operating procedures linked to the EMS for the opening and closing of the shut off vales in the event of an incident/accident on site• Any differences to the proposed containment measures to the as built measures in place in the final construction of the Deeside paper mill.• Confirmation that the containment measures on site meet CIRIA guidance C736 by a suitable qualified engineer.

ANNEX 2: Improvement Conditions

The following table of improvement conditions has been included in the permit and the decision for their inclusion discussed in the body of the text of this document.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	<p>The operator shall submit to Natural Resources Wales a written report on the commissioning of the Deeside paper mill and shall report in accordance with the approved commissioning plan. Also the report shall include but is not limited to:</p> <ul style="list-style-type: none"> • The environmental performance of the Deeside paper mill and a review against the conditions in the permit; • Any operating techniques or procedures developed and adopted during the commissioning of the Deeside paper mill for achieving and demonstrating compliance; and <p>The report shall outline any improvements and / or modifications identified as part of the commissioning and any timetable for their implementation.</p>	Within 6 months of commissioning
IC2	<p>Following successful commissioning and establishment of routine steady operation, the operator shall undertake a BS 4142:2014+A1:2019 noise impact assessment following guidance set out in <i>Noise and Vibration Management</i>:</p> <p><i>Environmental Permits and Method implementation document (MID) for BS 4142.</i></p> <p>Upon completion of the work, a written report shall be submitted to NRW for approval. If the assessment shows a higher impact than specified in the application, further measures need to be considered.</p>	Within 8 months of commissioning
IC3	<p>Operator to review 'Energy Flow diagram phase 1 & 2' and update where necessary following further information to NRW concerning heating of the production halls and emergency backup generator. A copy of the reviewed and updated 'Energy Flow Diagram for phase 1 & 2' shall be submitted to Natural Resources Wales.</p>	Within 6 months of commissioning
IC4	<p>Operator to review and update emission point plan following proposed change from 2 X 1.35MWth gas boilers to supply heat for the production halls (A1 and A2) to 6 x 208KWth electric heat pumps. Operator to also update operating techniques and submit the revised emission plan to Natural Resources Wales.</p>	Within 6 months of commissioning

ANNEX 3: Consultation Responses

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 (PHW) -The overall conclusion from PHW was that - provided the site is operated in line with current sector guidance and BAT then there were no grounds for objection based on the public health considerations contained within the application. Some further matters were raised concerning the discharge to the River Dee and modelling for PM _{2.5} . Also, the handling of complaints and their investigation.	We have addressed the comments raised through our determination of the permit. A further information request was made to the applicant in respect of modelling of PM _{2.5} and the response was reviewed by our Air Quality and Noise Team who were satisfied the applicant has addressed particulates satisfactorily within the response. Furthermore, pre-operational conditions have been added in respect of commissioning of key plant namely the ETP to the River Dee and the implementation of an EMS. We are satisfied that the operator will meet these requirements.

Consultation Responses from Members of the Public and Community Organisations

No responses were received from any of the following tabled below from the consultation of the application.

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

No responses received through advertising and consultation on the draft decision.

ANNEX 4: BAT Assessment

BAT Conclusions for the production of pulp, paper and board in the Official Journal of the EU on 30/09/2014. 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: [EUR-Lex - 32014D0687 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/lexuri/cs.do?uri=CELEX:32014D0687-EN)

BAT Conclusion Number	Summary of BAT Conclusion requirement	Page number in Application supporting document 'ICT UK Paper Mill Supporting Information-VR2 dated 9/3/2023 and pages 38-55 Table 6.1	Status One of the following: Not Applicable, Currently Compliant (CC), Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
<p>General BAT conclusions The BAT mentioned in this section apply to all installations covered by these BAT conclusions (Production of Pulp, Paper and Board).</p>			
1.	BAT is to implement and adhere to an environmental management system (EMS).	38 to 39	CC - (by the time the facility starts to operate).
2.	BAT is to apply the principles of good housekeeping for minimising the environmental impact of the production process	39 to 40	As above
<p>General BAT conclusions 3 and 4 – not applicable</p>			
5.	BAT is to reduce freshwater use and generation of waste water, BAT is to close the water system to the degree technically feasible in line with the pulp and paper grade manufactured	41	As above
6.	BAT is to reduce fuel and energy consumption in pulp and paper mills by using technique (a) and a combination of other techniques	42	As above
7.	BAT is to prevent and reduce the emission of odorous compounds originating from the wastewater system using a combination of techniques	43	As above
8.	BAT is to monitor the key process parameters according to the table given in the BAT conclusions document	44 to 45	As above
<p>General BAT Conclusion 9 – not applicable as no recovery boiler.</p>			
10.	BAT is to carry out the monitoring of emissions to water as indicated in the table included in the BAT conclusions document with the indicated	45 to 46	As above

BAT Conclusion Number	Summary of BAT Conclusion requirement	Page number in Application supporting document 'ICT UK Paper Mill Supporting Information-VR2 dated 9/3/2023 and pages 38-55 Table 6.1	Status One of the following: Not Applicable, Currently Compliant (CC), Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Please refer to the BAT conclusions for the production of pulp paper and board: EUR-Lex - 32014D0687 - EN - EUR-Lex (europa.eu) for the requirement in full as summarised below.		
	frequency according to EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.		
General BAT Conclusion 11 – not applicable			
12.	BAT is to implement a waste assessment (including waste inventories) and management system, so as to facilitate waste reuse, of failing that, waste recycling, or failing that, 'other recovery', including a combination of the techniques listed	46	As above
13.	In order to reduce nutrient (nitrogen and phosphorus) emissions into receiving waters, BAT is to substitute chemical additives with high nitrogen and phosphorus contents by additives containing low nitrogen and phosphorus contents	47	As above
14.	BAT is to reduce emissions of pollutants into receiving waters	47	As above
General BAT Conclusion 15 – not applicable			
16.	In order to reduce emissions of pollutants into receiving waters from biological wastewater treatment plants, BAT is to use all of the techniques given in the table included in the BAT conclusions document	47	As above
17.	In order to reduce the emissions of noise from pulp and paper manufacturing, BAT is to use a combination of the techniques given in the table included in the BAT conclusions document.	48 to 49	As above
18.	In order to prevent pollution risks when decommissioning a plant, BAT is to use the general techniques given in the table in the BAT conclusion documents	49 to 50	As above
BAT Conclusions for Kraft Pulping Process 19 – 41 – not applicable			
BAT Conclusions for Processing Paper for Recycling 42 – 46 – not applicable			
BAT Conclusions for Papermaking and Related Processes			

BAT Conclusion Number	Summary of BAT Conclusion requirement	Page number in Application supporting document 'ICT UK Paper Mill Supporting Information-VR2 dated 9/3/2023 and pages 38-55 Table 6.1	Status One of the following: Not Applicable, Currently Compliant (CC), Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
47.	Please refer to the BAT conclusions for the production of pulp paper and board: EUR-Lex - 32014D0687 - EN - EUR-Lex (europa.eu) for the requirement in full as summarised below. In order to reduce the generation of waste water, BAT is to use a combination of the techniques given in the table included in the BAT conclusions document.	50	As above
BAT Conclusion for Papermaking and Related Processes 48 – 49 – not applicable			
50.	In order to prevent and reduce the pollution load of waste water into receiving waters from the whole mill, BAT is to use a suitable combination of the techniques specified in BAT 13, BAT 14, BAT 15, BAT 47, BAT 48 and BAT 49	51 to 52	As above
BAT Conclusion for Papermaking and Related Processes 51 – not applicable			
52.	In order to minimise the amount of solid waste to be disposed of, BAT is to prevent waste generation and to carry out recycling operations by the use of a combination of techniques given in the table included in the BAT conclusions document	52	As above
53.	In order to reduce the consumption of thermal and electrical energy, BAT is to use a combination of techniques given in the table included in the BAT conclusions document	52 to 54	As above