

Scottish Environment Protection Agency	Document Number	IED-DD-02
Pollution Prevention and Control (Scotland) Regulations 2012 Application for a Permit or Variation to a PPC Part A Permit Decision Document	Issue Number	V2.0
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**DSM Nutritional Products (UK) Ltd
Dalry, Ayrshire**

Operator Initiated Variation (Substantial)

PPC/W/0020037 as varied

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How to use this form

Purpose of the document - This document is intended to demonstrate transparency of the determination process to all interested parties. It should record all significant issues, decisions made, actions taken, and rationale for the approach adopted. It should be sufficiently detailed to demonstrate that all legal requirements were adhered to and provide the basis for defending any appeal.

Language used – You should use non-technical language as far as practicable, avoiding unexplained acronyms and technical terms. While aiming to be comprehensive, it must also be as brief as possible, consistent with the overriding need for clarity and accuracy. Officers should bear in mind that much of the document may be available publicly under the Freedom of Information Act etc.

Timely recording of information - Completion of the various forms should be done on a progressive basis rather than at the end of the process.

Level of detail - Officers should use their professional judgement as to the level of detail required which will depend on the complexity of the process. Officers must consider why the information is required and ensure appropriate detail is included. Each table is designed to be expanded as text is added and will obviously allow the insertion of additional rows where necessary

Applicability of any Section - Do not delete whole sections of the form unless directed to do so. If something is not applicable to your determination please record this on the form and give a justification if appropriate indicating you have considered the issue and not just missed it.

1 Non-Technical Summary of Determination

Provide a non-technical summary of the process and determination

DSM plans to construct and operate an animal feed additive production and distribution facility. The proposed development would manufacture a product known as Bovaer®.

Bovaer® is a feed additive for cows (and other ruminants, such as sheep, goats, and deer) which reduces enteric methane emission by approximately 30% for dairy cows and even higher percentages (up to 90%) for beef cows.

The proposed animal feed additive production and distribution facility will result in additional activities being undertaken within the PPC permit boundary.

A caustic scrubber will be installed to all vent streams prior to reaching the off-gas incinerator to neutralise acids from vent gas. All vented gas vapours from the storage and processing of volatile substances will be directed to the off-gas and liquid treatment unit. Additional abatement to support the proposed process includes stripping of the Primary Process Solvent from wastewater. Resultant effluent will be sent to site wastewater treatment facilities and a portion of Primary Process Solvent to the off-gas and liquid treatment unit for thermal destruction.

Effluent from the production process will be integrated into the existing waste water treatment activities at the installation and there will be no change to the existing emissions to sewer.

New Technical Plant

- Equipment associated with the new production process including a new production building; tank farms, control room, transformer room, reactor building.
- Off-gas & Liquid treatment consisting of a caustic scrubber, thermal oxidiser, series of three wet scrubbers and a selective catalytic reduction unit and continuous emission monitoring systems (CEMS) for flue gas emissions.
- Emergency generator.

Two new point source emissions to air;

- The off-gas & liquid treatment unit stack
- The emergency generator stack.

In addition the following changes have also been made to the permit at this time, reference to redundant plant has been removed, this includes:

- Removal of boilers 1 & 2
- Removal of temporary boilers.
- Removal of Schedule 8 the production of octabase hydrochloride (a new Schedule 8 has been included).

Glossary of Terms

BAT - Best Available Techniques
BREF – Best Available Techniques Reference Document
BAT-C – Best Available Technique Conclusions
ELV – Emission Limit Value
CO – Coordinating Officer
IED – Industrial Emissions Directive
CEMS – Continuous Emissions Monitoring System

2 External Consultation and SEPA's response

Guidance:

In general Public Consultation, PPC Statutory Consultation and the Public Participation Process is required if you are processing a new permit or a substantial variation to a permit. Further information on this is provided in the interim procedure for the Part A process that you are determining.

Is Public Consultation Required? (if no delete rows below)		Yes
Advertisement Check:	Date	Compliance with advertising requirements
Edinburgh Gazette	02/07/2024	Yes
Ardrossan & Saltcoats Herald	03/07/2024	Yes
Officer Checking advert: -		
No of responses received	Zero.	
Summary of responses and how they were taken into account during the determination:		
n/a		
Summary of responses withheld from the public register on request and how they were taken into account during the determination:		
n/a		
Is PPC Statutory Consultation Required? (if no delete rows below)		Yes
Food Standards Scotland:	Yes – response received 05/07/2024, No concerns raised. Provided that the applicant complies with the relevant SEPA Guidance and all other relevant PPC Guidance Notes and Regulations, Food Standards Scotland considers it unlikely that there will be any unacceptable effects on the human food chain from the emissions from this installation.	
Health Board:	Yes – response received 28/06/2024, concerns raised with the information provided in the Noise Impact Assessment and Noise Management Plan. These concerns were considered at the appropriate determination stage of the process. Proposed consideration for an update to COMAH safety report following changes to the installation and for this be shared with relevant authorities. This requirement is covered by the operators obligations under the COMAH regulations.	
Local Authority	Yes – response received 17/06/2024. No concerns raised. Information provided re. planning permission for the proposed works at the installation – dated October 2022.	
Scottish Water	Yes – response received. No concerns raised. Standard response provided information on standard precautions for assets during development activities. Shared with DSM 01/07/2024.	
Health and Safety Executive	Yes – no response received.	
NatureScot	Yes response received 21/06/2024. No concerns raised.	
Discretionary Consultation required? (if yes provide justification and details below, otherwise delete row)		No
Enhanced SEPA Consultation required? (if yes provide justification and details below, otherwise delete row)		No
“Off site” consultation required (if yes provide justification and details below, otherwise delete row)		No
Transboundary Consultation required? (if yes provide justification and details below, otherwise delete row)		No
Is Public Participation Consultation Required? (if yes provide justification and details below, otherwise delete rows below)		Yes

STATEMENT ON THE PUBLIC PARTICIPATION PROCESS

The Pollution Prevention and Control (Public participation)(Scotland) Regulations 2005 requires that SEPA's draft determination of this application be placed on SEPA's website and public register and be subject to 28 days' public consultation. The dates between which this consultation took place, the number of representations received and SEPA's response to these are outlined below.

Date SEPA notified applicant of draft determination	25/04/2025
Date draft determination placed on SEPA's Website	25/04/2025
Details of any other 'appropriate means' used to advertise the draft. Seek advice from the communication department	
Date public consultation on draft permit opened	25/04/2025
Date public consultation on draft permit consultation closed	
Number of representations received to the consultation	
Date final determination placed on the SEPA's Website	
Summary of responses and how they were taken into account during the determination:	
Summary of responses withheld from the public register on request and how they were taken into account during the determination:	
<p>REMOVE THIS BOX FROM ANY VERSION OF THIS DOCUMENT TO BE PLACED ON THE WEBSITE OR PUBLIC REGISTER. RETAIN IN THE VERSION FOR THE WORKING FILE.</p>	
Officer:	-

3 Administrative determinations**Determination of the Schedule 1 Activity**

No changes required.

Determination of the Stationary Technical Unit to be permitted

Removal of redundant STU and inclusion of STU associated with new production process.

Determination of Directly Associated Activities

No changes required.

Determination of Site Boundary

No changes required.

Officer: -

4 Introduction and Background**4.1 Historical Background to the activity and variation**

The current DSM installation facility performs chemical processing activities involved in Vitamin C and B5 production. This process involves a wide range of supporting units, including tank farms; production buildings, utilities buildings, material storage areas; laboratories; engineering workshops; cooling towers; substation; nitrogen plant;; waste water treatment plant; offices, car parks and weighbridge.

The proposed new plant will be constructed within the existing PPC Permit Boundary, in an area referred to as 'Area 18'.

The wider DSM site is located within an industrial area, surrounded by predominantly commercial/industrial premises. Residential properties are in close proximity (approximately 400m to the southwest).

The River Garnock is located approximately 125m east and Rye Water lies approximately 280m south of the site. To the south of the site, beyond B780, lies the town of Dalry, and to the north lies predominantly agricultural fields.

DSM plans to construct and operate an animal feed additive production and distribution facility. The proposed development would manufacture a product known as Bovaer®.

Bovaer® is a feed additive for cows (and other ruminants, such as sheep, goats, and deer) which reduces enteric methane emission by approximately 30% for dairy cows and even higher percentages (up to 90%) for beef cows.

The proposed animal feed additive production and distribution facility will result in additional activities being undertaken within the PPC permit boundary.

4.2 Description of activity

The site comprises the following activities, as permitted under the Pollution Prevention and Control (Scotland) Regulations 2012 (as amended):

- Section 1.1 Part A (a) Combustion; and
- Section 4.1 Part A (a) Production of Organic Chemicals

The following directly associated activities take place on site:

- The operation of storage and handling facilities for all raw materials, wastes, products and their intermediates; and
- Operation of site utilities including quality assurance, effluent treatment, site drainage, refrigeration, air compression, cooling, heating and fire protection systems.

The proposed new Bovaer production process will include operation of:

- A new production building;
- Office building;
- Two tank farms (Tank Farm West and Tank Farm South);
- Caustic scrubber;
- An off-gas liquid treatment unit (including a thermal oxidiser, three wet scrubbers and selective catalytic reduction unit);
- Control room;
- Transformer room;
- Reactor building; and
- Several new roadways.
- The proposed process will be integrated with the site's existing effluent treatment processes
- Addition of a diesel fuelled emergency generator with a rated thermal input of 1.12MWth.

4.3 Outline details of the Variation applied for

The operator is applying for a Variation to the PPC permit to allow for the operations associated with the new Bovaer production process, specific permit changes will include:

- Updating the description of the stationary technical unit to include the operation of an off-gas and liquid treatment unit.
- Updating the description of the directly associated activities to include the operation of the diesel fired emergency generator.
- The inclusion of a new emission point to air from the off-gas and liquid treatment unit, associated ELV's and monitoring requirements.
- The inclusion of a new emission point to air from the emergency generator, associated ELV's (where applicable) and monitoring requirements.

Removal from the PPC Permit of existing Boilers 1 & 2 and Temporary Boiler (4 of).

At the time of the assessment SEPA discussion with the operator under the variation process the suggestion to remove out dated conditions from the permit. This included removal of historic or redundant combustion plant. Also the removal of reference to the former Octabase Hydrochloride production process.

Confirmation of the request to make these changes was made in writing via email:

Email 22/08/2024 – 14:54, from, DSM-Firmenich, Environment Specialist.

'Following our discussion on the MCPD on 6th August, we would like to confirm that we are no longer planning to use Boiler 1, Boiler 2, and temporary boilers (as described in Variation No. 7), and all applicable conditions can be removed from the existing PPC permit. This process can be done as part of the CC3 project PPC variation process and planned permit consolidation. We also accept SEPA's proposal to replace the Octabase Schedule with Bovaer'.

The request was considered by SEPA and deemed acceptable and not a contradiction of BAT for the process. These changes are referred to in this decision document under the applicable section(s).

Schedule 1 & Schedule 5 and associated Tables of the PPC permit shall require editing as part of this requirement.

4.4 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

None.

4.5 Identification of important and sensitive receptors

In line with SEPA's nature conservation procedure for environmental licensing the area of land where the proposed operation is to be carried out is at *NS 29470 50400* within the screening distance of *multiple SSSI's including: Southanna Sands, Ashgrove Loch, Bogsdie Flats, Castle Semple & Barr Lochs.* Nature Scot was consulted on application, see section 2.

The installation is also located immediately adjacent and to a number of domestic dwellings with the conurbation of Dalry to the southern boundary and Kilwhinning, Glenagarnock and West Kilbride amongst others.

Officer: -

5 Key Environmental Issues

5.1 Summary of significant environmental impacts

Emissions to Air:

- Source: Off Gas and Liquid Treatment Unit.& Emergency Generator

- Emissions: Products of combustion (NO_x, SO_x, PM, CO), Ammonia, TVOC's, Dichloromethane, Gaseous Chlorides, Chlorine, Dioxins and Furans.

Emissions to Land: - none

Emissions to Water:

- The application does not list any effluent emissions direct to the water environment.
- Effluent from the new process will be directed to the existing waste water treatment process and discharged to the existing trade effluent sewer connection at the site. Emissions to be monitored include Total Suspended Solids, Metals and their compounds, Dioxins and Furans.

Other Potential Impacts:

- Noise (onsite vehicle movements, internal factory noise breakout, condenser unit, fan motors, pumps / mechanical treatment / steam venting).
- External to site: High Frequency Vehicle Movements, deliveries, loading / unloading.
- Odour from point source and potential fugitive emission sources.

5.2 Emissions to Air

Point Source emission to air:

The new process will introduce two new point source emissions to air;

- **the off-gas and liquid treatment unit stack**
- **the emergency generator stack.** (The emergency generator will not be in regular use and is anticipated to operate for less than fifty hours per year (for testing purposes only). As a result it has not been considered as part of emissions to air assessment) but is subject to reporting and monitoring requirements according to Medium Combustion Plant Directive requirements.

A new off-gas and liquid treatment unit will be used to treat residual vented gas vapours and surplus process liquid solvent that cannot be handled by the existing site waste water treatment plant.

The thermal oxidiser will receive a gas stream from the caustic scrubber unit which will neutralise any acid vapours from the new plant. Air will be received into the thermal oxidiser via a single inlet.

The thermal oxidiser will provide abatement of volatile organic compounds in the gas stream, fuelled by natural gas it will destroy process solvent by thermal destruction. Abated emissions from the thermal oxidiser will then pass through a series of wet scrubbers for HCL removal, followed by a selective catalytic reduction unit. Final treatment emissions will be via a single 36m high, 0.27m diameter exhaust stack.

The application has included an Air Emissions Risk Assessment to assess the potential air quality effects from the proposed variation on nearby sensitive receptors. The assessment includes the outcome of detailed atmospheric dispersion modelling of the existing permitted emissions and the new off-gas & liquid treatment unit. The model considers worst case continuous emissions rates and is a conservative assessment. It also includes emission characteristics, (location, height of emissions, velocity, temperature) and deposition rates along with meteorological data and terrain modelling information. The model conclusions stated that *maximum ground level process contributions will have an insignificant impact on human health; and predicted impacts on designated sensitive habitats are considered insignificant.*

BAT Justification:

The application states the most applicable BAT related to point source emissions to air is:
Common Waste Gas Management and Treatment Systems in the Chemical Sector.

The application compares the predicted emissions to air from off-gas & liquid treatment unit with BAT-AELs prescribed within the 'Common Waste Gas Management and Treatment Systems in the Chemical

Sector' BAT-C document, as had been agreed with SEPA as the most applicable reference document for the process. Emissions are predicted to comply with all emission limit values for related substances.

Thermal oxidation is listed under BAT11 as a technique to reduce channelled emissions to air of organic compounds in the waste gas stream. Thermal oxidation in combination with a caustic scrubber to minimise vapours associated with acid gasses and wet chemical scrubbers for acid recovery comply with BAT 12c techniques concerning reduction of chlorinated waste gasses. Selective catalytic reduction (SCR) for NOx abatement reduction are also listed under BAT12e as an applicable technique.

In line with SEPA pre-application discussions the applicant has proposed emissions to air from the off-gas & liquid treatment unit be permitted to include ELV's in line 'Common Waste Gas' (WGC) BREF / BAT Conclusions (note these ELV's are mirrored in the draft UK BAT WGC BREF).

A Summary of proposed ELV's are listed below;

Substance	BREF BAT-AEL (range).
Oxides of Nitrogen (as NO ₂) mg/Nm ³	200
Carbon Monoxide mg/Nm ³	No BAT-AEL
Sulphur Dioxide mg/Nm ³	150
Total Volatile Organic Compounds	20
Dichloromethane	1
Gaseous Chlorides HCl	10
Chlorine Cl ₂	2
Ammonia NH ₃	10
Dioxins & Furans	0.05

Liquid Waste Disposal / Incineration:

The application states that small quantities (average of 2kg/hour) of liquid primary process solvent are intended to be disposed of in the thermal oxidiser. Liquid waste incineration is not an activity covered by the best available techniques documents referred to in the application. This activity classified as a PPC 5.1 'incineration or co-incineration of waste' activity as defined by Chapter IV of the Industrial Emissions Directive (IED).

The application includes a BAT Appraisal document for the selection of the technology best suited to treat process emissions including the liquid primary process solvent containing chlorinated compounds. The ERG Air Pollution Control – 'CC3 Off-Gas Concept Engineering' report –states under the selected Thermal Oxidation techniques - '*Thermal destruction of VOC species. Due to presence of chlorinated compounds, thermal oxidation at 1,100°C for min 2s residence time required under Industrial Emissions Directive (IED)*' – Pro's '*Capable of treating liquid and gaseous wastes simultaneously*'.

See section below for further discussion on this matter.

SEPA Comment:

Liquid Waste Disposal / Incineration and implications on emissions to air:

SEPA raised with the applicant the technical differences with the proposal to dispose of liquid waste by incineration versus the use of a thermal oxidiser. It was considered that the activity may require permitting as an additional PPC 5.1 activity as it is classified as waste incineration activity under Chapter IV of the Industrial Emissions Directive.

SEPA provided to the operator the following justification on how the activity would be regulated and permitted.

Email to DSM – 7/11/2024

- *'The use of the thermal oxidiser to treat VOCs and other emissions involves the disposal of liquid waste by incineration. A thermal oxidiser is defined in BAT conclusions as the treatment of waste gases using thermal or catalytic oxidation, referring only on the treatment of waste gases. The LVOC BATc, (BAT 10) states that an incinerator for the combined treatment of liquid waste and waste gas may be used instead of a thermal oxidiser. Therefore, where liquid waste is also to be treated, this is incineration.*
- *The waste gas and liquid treatment system (including the thermal oxidiser) is an integral part of the Bovaer treatment process which forms part of the overall chemical production process. As such the incineration of liquid waste is carried out as part of the s.4.1 Part A activity, and therefore is excluded from the s.5.1 incineration activity due to the qualification "unless carried out as part of any other Part A activity...". The PPC thresholds for incineration and co-incineration under s.5.1 are therefore not relevant.*
- *The use of the thermal oxidiser to dispose of liquid waste is the incineration of waste. Reg.29(1)(a)(i) requires that SEPA must ensure that a permit granted or varied for the incineration or co-incineration of waste (with no threshold) contains such conditions as SEPA considers necessary to give effect to the provisions of Chapter IV and Annex VI of the Industrial Emissions Directive.*
- *Ch.IV of the IED applies to waste incineration plants and waste co-incineration plants which incinerate or co-incinerate solid or liquid waste, and contains no de minimus threshold. Ch.IV applies to all incineration plants, while Ch.II and the Waste Incineration BATc apply only to incineration plant above the threshold of >10tpd as set out in IED Annex I.*
- *PPC Reg.18 does not apply, the definition of Specified Waste Management Activities applies to an activity comprising the disposal or recovery of waste in a waste incineration installation, which is defined by reference to only those plant falling within the s.5.1.*

The permit variation will authorise the incineration of liquid waste as part of the existing 4.1 authorisation, however some aspects of IED chapter IV will require to be included in the permit as part of the variation.

In response to SEPA's email DSM provided to SEPA on 18/11/2024 a GAP analysis assessment with regard to Chapter IV and IED Article 50 waste incineration requirements and how the current process design would comply.

The summary of the analysis concerning emissions to air is as follows:

'Summary of gap analysis

In order to be fully compliant with Chapter IV, the ERG plant would need to be modified to include:

- *A CEMS system to continuously monitor TOC, Dust, CO, NOx (already monitored), HCL, SO2 & HF. Possibly HCL, SO2 & HF could be discounted by SEPA if they were satisfied that our process cannot generate excessive levels of these emissions. SO2, NOX and Dust may not require continuous monitoring if our waste incineration plant was also being considered as a combustion plant with a heat load of <50MW (our heat load is only*

600kW). Compliance with the ELV amounts of these components would not be a problem.

- A new temperature transmitter at the stack to measure the outlet temperature of the stack gas
- The CEMS would also need to measure the water vapour content of the stack gas for corrections

We would need to program the DCS to stop the waste gas/waste liquid feed if any ELVs were exceeded, which due to the nature of the process would also shut down the production plant. Currently the parameters on the gas train that shut down the plant if they are not in spec are:

- post heat recovery temperature < 450°C for 30 mins or <400°C for 5 mins
- double ID fan failure or low pressure in TO
- double hot oil pump failure or low hot oil pressure
- hot oil temperature > 330°C
- thermal oxidiser temperature > 1200°C
- double ID fan failure
- key device or instrument faults

Waste gas and waste liquid is currently prevented from entering plant if thermal oxidiser temperature is < 1100°C'

The gap analysis confirmed that some aspects of the original design did not meet the prescribed requirements set out in the IED Chapter IV Annex VI, primarily CEMS and other process monitoring requirements.

Permitting Decision:

Following consultation with SEPA Legal staff it was confirmed that:

PPC Regulation 29(1) (a) concerning the Schedule 1 conditions: incineration and co-incineration of waste states that SEPA must ensure that a permit granted or varied for the incineration or co incineration of waste contains '*such conditions as SEPA considers necessary*' to give effect to the provisions of Chapter IV and Annex VI of the IED.

The continuous measurement requirements set out in Annex VI Part 6 Section 2.5 i.e. HCL, HF, SO₂ may be exempt where the operator can prove that emissions of those pollutants can under no circumstances be higher than the prescribed emissions limit values.

The decisions was made to for the permit to be varied to not stipulate CEMS requirements for all air polluting substances and that an information gathering approach would be applied to the process for the first 12 months of operation. High frequency (quarterly) spot sampling would be required for all air polluting substances in order to demonstrate that where applicable Annex VI Part 6 Section 2.5 could be justified, or CEMS upgrade requirements would require insertion into the permit by a SEPA initiated variation at a later date. The operator will be required to provide a report assessing the data obtained by the high frequency spot sampling of air emissions and requirements for CEMS monitoring.

Chapter IV and Article 50 IED requirements concerning emissions to air and waste incineration included in the variation are as follows:

- CEMS requirements for NO_x, Oxygen Content and CO.
- CEMS requirements for TOC (as TVOC) will be reviewed following the first year of operation.
- Reporting concerning combustion zone temperature and residence time in the thermal oxidiser confirming the requirements of Chapter IV.
- Interlock, Control Systems and Alarms for the combustion and waste feed processes.

Emission limit values for emissions to air are based on originally proposed WGC AELs and provide a higher level of protection in comparison to the limits prescribed in Annex VI Part 3 of the IED – see section 9 for further comparison and justifications.

Air Modelling Risk Assessment:

The application states that all potential waste gasses will be enclosed, contained and abated in the off-gas and liquid treatment unit. The proposed emissions to air from the off-gas & liquid treatment unit are a result of the combustion of a mixture of natural gas and volatile organic compounds from the manufacturing process.

SEPA air modelling specialists assessed the air emissions risk assessment and stated that despite some criticisms regarding the technical aspects of the assessment, the overall modelling methodology is acceptable. The Process Contributions (PC) are small, and so the overall risk of exceedances due to emissions from the facility is low.

Fugitive emissions to air:

The following information summarises the techniques related to fugitive emissions to air and have been compiled from the following application supporting documents;

- 'Best Available Techniques / Operating Techniques'
- 'Appendix F– BAT Demonstration'
- 'Environmental risk assessment document'

BAT Justification:

The application documentation discusses at length the specific designs to ensure BAT is complied with and any new containment and handling equipment should not negatively impact the environment.

The most applicable BAT related to fugitive emissions to air is:

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

Common Waste Gas Management and Treatment Systems in the Chemical Sector

Emissions from Storage BATc (Horizontal Guidance) – relevant BAT topics concerning fugitive emissions include:

The same broad requirements are discussed in each document with the latter specifying the most specific discussions for BAT for related processes;

- Consideration of the physico-chemical properties of substances to be used / stored.
- Thermal insulation of tanks containing volatile substances.
- Raw materials storage close to atmospheric pressure.
- Abatement of emissions from storage tanks which can result in significant environmental affect.
- Vapour displacement and treatment.
- Calculation of VOC emissions for processes where such emissions are to be expected.
- Selected tank design appropriate to the substances being stored.
- Operation of a leak detection and repair programme.
- Pipework, flange and valve design for safe transfer and handling.
- Pumps and compressor operation and design to ensure appropriate seals for the substances and operational conditions.

VOC's: The application states that the plant has been designed to minimise fugitive emissions to air, in particular VOCs with all systems and processes handling such materials being vented to the vent header systems (x 3) with subsequent abatement in the caustic scrubber and the off gas and liquid treatment units. Other techniques include the quenching or recirculation of harmful vapours during the various stages of production.

A HAZID and HAZOP assessment has been part of the containment design process, including monitoring, alarms and interlocks in line with reviews of existing standard operating procedures. 'DSM are currently compiling an inventory of channelled and diffuse emissions to air for the wider DSM site, as part of the environmental management system'.

Fugitive emissions from the use of solvents in the new process will be calculated on an annual basis by using a mass balance method in line with BAT. The application states the trigger for additional monitoring is event of exceeding pre-set annual quantities. The applicant states it is in the process of setting up a leak detection and repair (LDAR) programme for the wider site to ensure fugitive emissions are monitored and minimised.

Dust: The environmental risk assessment makes specific reference to dust risks from amorphous silica powder offloading activities, are listed as a low risk activity. The application states that the operator will operate unloading activities for silica in line with appropriate big bag offloading and handling procedures (updated to include the proposed activities). This process has been designed to minimise the potential for dust generation. Control measures to reduce potential for diffuse dust emissions include;

- Meteorological conditions during unloading being considered where appropriate.
- All deliveries and offloading activities will be accompanied and overseen by a trained site operative.
- Visual inspections to be carried out on the silica silos and good house-keeping measures to be employed.

SEPA Comment:

The application has given appropriate consideration of BAT with regard to minimising the risk of fugitive emissions to air from the new process..

Ammonia containing Compressor Chill Systems:

During pre application discussions with the operator it was raised that the two new compressor chill systems contained ammonia. Ammonia is classed as a toxic liquified flammable gas and subject to specific BAT with regard to compressor plant design.

The proposed design is for a single mechanical seal as had been identified as standard specification from the technology provider despite not specifically meeting the requirements of BAT 68 (Emissions From Storage BATc) /BAT 23c (Common Waste Gas), where double seals are listed as BAT when using high integrity equipment;

BAT 68: "BAT for compressors, transferring toxic gases is to apply double seals with a liquid or gas barrier and to purge the process side of the containment seal with an inert buffer gas"

SEPA had however considered the Emissions from Storage BREF document does discuss other potential compressor design may be applicable to the DSM equipment, which include the use of a single seal and slam shut valve as follows;

SEPA Officer pre application comment to DSM - "An option from the supplier is to fit a slam shut valve [10 seconds operational time] in the suction side to isolate the compressor and thus the seal. A non-return valve prevents flow back from the discharge side into the compressor. The compressor would therefore effectively be isolated and this could reduce the available inventory which would be released".

During pre application the operator was requested to provide information in the application to justify a single mechanical seal. The original application information was found to address only parts of the request:

The process related COMAH safety report modification document discusses the potential risks from the new ammonia chillers and informs that each of the two units contains 200kg of ammonia, emergency response documents are in place (as required by COMAH) which include the considerations of a loss of primary containment of ammonia with future actions raised to detail safeguards to provide controls to mitigate against potential loss of containment from the new chillers.

SEPA requested further information (further information notice / FIN) from the operator on the design of the chillers – see section 8 Admin Dec Doc - FIN section.

Information required included:

- A discussion on why ammonia had been selected.
- ii. Provide information on ammonia toxicity.
- iii. Confirm the compressor type and speed.
- iv. Confirm what measures are proposed to minimise the release of ammonia in the case of a seal failure for example whether a slam shut valve(s) will be fitted in the chiller ammonia circuit and if so, details of their location and operation.
- v. Confirm the predicted worst case release of ammonia from the chiller in the case of a seal failure taking into account the measures proposed to minimise releases.

18/11/2024 The operator provided a document 'Response to Further Information Notice PPC/W/0020037 Section 1 - Chiller Systems Containing Ammonia' prepared by the operator in conjunction with the supplier of the ammonia chillers. The document provided information specific to each item requested previously in the Further Information Notice and the following justifications to the query were included:

The justifications made in the document qualify in sufficient detail as to the deviation from the technical requirements of BAT 68 and provide reassurance that the risk of failure from the design is sufficiently low for environmental, health and safety reasons.

Odour:

The application considers risks of odour from the new manufacturing process as low and discusses this in an environmental risk assessment document.

- Receptors were predicted to be nearby commercial activities and residential receptors.
- Odour sources were considered a risk from manufacturing of products and storing of raw materials.
- All storage of raw materials and wastes are stated as being enclosed.
- The manufactured product will be odourless.
- Limited potential for odour generation from storage vessels and tanks as odorous air from these will be vented to the caustic scrubber and subsequent off gas and liquid treatment unit.
- If any odour is identified the cause will be investigated and managed in accordance with operational and management procedures.

BAT Justification:

The most applicable industry guidance related to odour control is;

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

& Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc.

Both documents discuss the applicable odour control methods and management techniques where odour releases are expected, periodic monitoring of odour emissions, potential for modelling of emissions to assess impact, use of odour management plans. They also state such measures are only applicable where odour nuisance can be expected or if there is a known history of odour.

– the application states;

'The assessment of the potential for fugitive odour undertaken as part of the planning application concluded that the likely odour effect at each receptor assessed was found to be 'negligible'. Effects from operational odours are therefore considered to be 'not significant'.

Operational techniques includes enclosure of all vessels and tanks with potential for odour generation, with these being vented to the a scrubber system and off-gas and liquid treatment unit which includes thermal oxidation.

SEPA Comment:

The proposed methods meet BAT requirements for odour control.

The techniques listed above have been included in the design and operation of the process to ensure odorous emissions to air from the process are controlled and line with the applicable BAT & SEPA Odour Guidance 2010. Under the hierarchy of odour control as per SEPA Odour Guidance, potential odorous emission shall be contained within a sealed system and extracted by a dedicated ventilation system which will provide odour destruction.

BAT states that where there is no history of odour problems or anticipated odorous emissions then specific odour modelling may not be required.

Regulation of the existing permitted activities confirms that the site does not have any recent history re odour complaint.

The existing PPC permit includes the standard permit condition to ensure no offensive odour outwith the site boundary.

From the information provided it is not deemed necessary to specify a permit requirement for an odour management plan. The operator provides information that any received odour complaints or detected odour will be investigated in line with the existing operational and procedures.

No changes to the permit are required with regard odour.

5.3 Emissions to Water

Point Source Emissions to Surface Water .

The application states;

- there are no intended point source emissions direct to surface water.

All water and effluent emissions from the new process (including water run off from roof, road, fire and surface) is linked to the existing water drainage network which discharges to the Scottish Water sewer network after treatment in the sites WWTP.

Onsite measures prior to this discharge include a storm water retention chamber, retention basin and direct discharge to sewer, or in cases of detected contamination (sampling prior to discharge) can be directed to the onsite WWTP prior to eventual sewer discharge.

These arrangements are in line with SEPA's statutory response to the related development planning application where the response stated;

'All trade effluent/foul drainage and perimeter/roof drainage from the development must be connected to the on-site effluent treatment system prior to discharge into the public sewerage system in accordance with Scottish Water requirements'.

Point Source Emissions to Sewer:

The application states;

- that no new emission points to sewer are requested

- 'no change is requested to the existing consent levels for emission point S1 as defined in the PPC permit'.

There is a single existing point source emission to sewer (emission point S1), which discharges to the New Garnock Valley Sewer, onto the Stevenston Sewage Treatment Works and eventual discharge to the Firth of Clyde.

The new manufacturing process will result in increased effluent emissions via emission point S1. Emission volumes are estimated to increase from 4,800m³/ day to 4960m³/ day. An increased process contribution of 160m³/day.

The existing permit conditions do not stipulate an emission limit value in relation to discharge volumes.

The applicant states the existing trade effluent discharge consent limit is 6,000m³ and this has been confirmed in the appended document to the application – 'Scottish Water Trade Effluent Quality consent to a new discharge trade effluent' effective from 01st December 2016.

Despite there being no request to alter existing effluent emissions to sewer, the applicant has provided detailed assessment of the new effluent streams from the process;

- WWTP-01 – Low Sulphate Effluent, to be treated via existing WWTP B46 / B30 CHES.
- WWTP-02 - High Sulphate Effluent, to be processed via existing site WWTP B30.

It is noted that the BATOT documentation also lists a third effluent stream'

- Liquid Primary Process Solvent waste, to be treated by the thermal oxidiser and destroyed by incineration (this stream is not applicable to the waste water treatment activities and sewer discharge. The decision to incinerate liquid waste solvent is discussed in more detail in Section 5.2 emissions to air.

The application provides confirmation that the existing WWTP operations are capable of handling the additional effluent inputs and comply with BAT for the industry. The operator states there is no required modifications to the existing WWTP. A trial to dose the existing WWTP with sodium nitrate to simulate the potential for nitrates in the new effluent from Bovaer was undertaken and the WWTP coped with this addition.

The assessment confirms that;

- There will be no negative impact on existing waste water treatment processes both on and offsite.
- There will be no hazardous substances in the eventual discharge to the Firth of Clyde.
- The additional effluent discharged through the WWTP will not exceed the limits presented in the existing trade effluent discharge consent or existing PPC permit emission limits.
- DSM have also added a new analyser on the effluent from Bovaer to confirm there is no exceedance of a 10ppm limit for methylene chloride

No detailed water quality impact has been provided in the application as it is predicted that there will be no significant alteration to the existing effluents, with the exception of low concentration sodium salts (which are not named relevant hazardous substances) - the 'eventual discharge to the environment at the Firth of Clyde is not expected to have any significant impact given the saline nature of the receiving waters.'

BAT Justification:

The most applicable guidance related to waste water collection and treatment activities is Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc.

The application documentation discusses the specific onsite design to ensure BAT is complied with and any additions to the process waste water / effluent will not negatively impact the environment.

The most relevant techniques to water emissions and application justification are listed below;

Waste Water Collection and Segregation

BAT 8 - *segregate uncontaminated waste water streams from waste water*

BAT 9 - *provide an appropriate buffer storage capacity for waste water*

– the application states;

- Waste water streams from the proposed new process will be segregated by low and high sulphate content and treated via the existing waste water treatment plant.
- Primary process solvent waste will be treated by the new thermal oxidiser abatement equipment.
- Cleaning water from the proposed new process can be discharged to either existing waste water treatment plants.
- Uncontaminated rainwater (roof and hard standing surfaces) enter the existing storm water drainage systems, which involves a retention basin for segregation and testing prior to offsite discharge.
- Storm water discharges and emergency discharges are diverted to the existing retention basin (4,200m³ capacity). Waste water treatment process B46 is linked to this system. Waste water treatment process B30 includes a dedicated spill tank (1500m³ capacity) to allow for appropriate segregation and buffering prior to discharge.

Waste Water Treatment

BAT10 - *prevention, recovery, pre-treatment and final treatment.*

BAT11 - *integrated waste water management and treatment strategy.*

BAT 12 - *final waste water treatment techniques.*

– the application states;

- The site operates an on-site WWTP for treatment of all site waste waters, this is operated as part of an integrated waste water management and treatment strategy.
- The waste water streams will be segregated based on sulphate content.
- That the proposed process has been designed to be as efficient as possible and give rise to minimal waste effluent.
- Process solvent and acids will be recovered within the process and re-used.
- Residual process solvent in the process effluent is separated from the waste water (via evaporation) and is then sent to the off-gas and liquid waste treatment unit (thermal oxidiser for combustion) minimising the process solvent content in the waste water. (The decision to incinerate liquid waste solvent is discussed in more detail in Section 5.2 emissions to air).
- The waste water is directed to the existing onsite WWTP. Pre-treatment occurs with the removal of sulphate as effluents at existing WWTP building 30. Waste water from building 30 is buffered then transferred to existing WWTP building 46 for biological treatment.
- Final treatment will incorporate the biological treatment at building 46 and incorporates pH adjustment, equalisation, clarification and biological treatment. These treatment processes have been selected based upon the nature of the site waste waters and the treatment required to allow their discharge to sewer.

SEPA Comment:

The existing WWTP systems have been designed in line with BAT and should offer a high level of protection to the water environment when taking into account the liquid waste reduction, collection and containment measures also in place at the installation, both existing and for the new process.

The proposed new production process has been designed to incorporate into the existing system which it has been justified is capable of handling the relatively low increase in effluent and waste water process contributions.

The separation of primary process solvent from liquid effluent is in line with BAT to minimise the concentration of emissions to water, however the disposal of liquid waste by incineration is not covered

by the existing permitted activities and required further assessment see section 5.2 emissions to air for more information.

Due to effluent emissions from the Bovaer process potentially including emissions related to the IED incineration of waste PPC Regulation 29(1) (a) concerning the Schedule 1 conditions: incineration and co-incineration of waste states that SEPA must ensure that a permit granted or varied for the incineration or co-incineration of waste contains '*such conditions as SEPA considers necessary*' to give effect to the provisions of chapter IV and Annex VI of the IED. See section 5.9 for changes related to monitoring of effluent emissions.

Existing permit conditions with regard to effluent and handling & treatment, including sewer discharge remain appropriate to the new production process. However additional precautionary monitoring has been included in the variation to verify emissions meet expectations. Monitoring of effluent emissions from the off gas and liquid treatment unit have been included in the variation for Chapter IV requirements.

Fugitive Emissions to Water (inc. Containment):

The application states that at the planning stage it was concluded that the only viable route for additional surface water runoff was via the existing Scottish Water combined sewer.

The site operations include a contained drainage system whereby there are no direct discharges to the water environment from roof or surface water run off – for more information see Point Source Emissions to Surface Water.

As a consequence of the existing arrangement the potential for fugitive emissions to the water environment from the new process is considered low.

Containment and Handling

BAT Justification:

The application documentation discusses at length the specific designs to ensure BAT is complied with and any new containment and handling equipment should not negatively impact the environment.

The most applicable guidance related to fugitive emissions to water is:

Emissions from Storage BATc (Horizontal Guidance) – relevant BAT topics concerning fugitive emissions include:

- Storage of liquids and liquefied gases - General principles to prevent and reduce emissions.
- Tank specific considerations.
- Preventing incidents and (major) accidents.
- Operational procedures and instrumentation to prevent overflow.
- Inspection and maintenance.
- Considerations on transfer and handling techniques.

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

– BAT 3.2 Fugitive emissions to surface water, sewer and groundwater:

- Provide hard surfacing in areas where accidental spillage or leakage may occur.
- Drain hard surfacing of areas subject to potential contamination so that potentially contaminated surface run-off does not discharge to ground.
- Hold stocks of suitable absorbents at appropriate locations for use in mopping up minor leaks and spills.
- Consider undertaking leakage tests and/or integrity surveys to confirm the containment of underground drains and tanks

Supporting document 'Appendix F – BAT Demonstration' provides detailed information and justification for each applicable technique and compliance with BAT.

The following information summarises the techniques related to fugitive emissions to water and have been compiled from application supporting documents;

- 'Best Available Techniques / Operating Techniques'
- 'Appendix F– BAT Demonstration'

13 x new tanks are listed as being required for the new process, with 820 m³ potential volume in total. These will be located over two dedicated tanks farms, the main tank farm and the acid tank farm.

Tank Specifications are as follows:

- All bulk storage tanks will be pressure vessels rated for at least -1 / 6 barg with dished ends
- Design temperature for all storage tanks will be -20°C / 120°C
- Many of the tanks will contain substances where cooling will be applied
- Each tank will connect to a discharge pump which will be located within the tank farm bund
- Each tank will include a sampling device on the recirculation line
- The tanks that require the contents to be temperature controlled, each will include a cooler on the recirculation line
- Each new tank will be supported on legs, which will be grounded to a suitable plinth.
- A common access platform has been designed to ensure a uniform elevation for the top of each vessel

The following information relates to the management of all tanks, bunds and relevant pipework and drainage;

- Considerable detail on the storage and containment methods in use by the operator and that will be applied to the new process, i.e 'the exterior of the process building, reactor building, control and tank farms will be surrounded by a newly installed drainage system which will drain to the existing onsite stormwater system where any losses can be contained to site'.
- *'Periodic inspection of the drainage system will be undertaken during the lifetime of the permit to inspect the integrity of the drainage system'*.
- Methods include the use of impermeable concrete bunds, that are segregated depending on contents, with corrosion resistant coatings in place for bunds containing acidic contents.
- Bunds will be sized appropriately in line with existing permit requirements and BAT.

The management of tanks farms is covered by dedicated procedures which include;

- A tank farm register (storage capacities and contents).
- Incorporation of new tanks and infrastructure into existing planned maintenance programmes.
- Inclusion of new tanks farms into the existing environmental critical items register (as part of the onsite environmental management system).
- Daily visual inspections as part of existing standard operating procedures.
- Sampling and analyses of any identified bund contents as per existing 'production discharge wastewater procedure'.

All tanks and bunds will be covered by the following requirements;

- The tank farms will be bunded.
- Bund construction to appropriate standards (CIRIA 736).
- Tank construction includes stainless steel or glass lining, pipe work will be stainless steel.
- Daily visual checks of tanks and pipework, plus 6 monthly integrity testing of tanks by leak detection method(s).
- Tank overflow protection by way of level monitoring (high and low level probes).
- Automated devices within the tank farm, including all tanker offload stations and filling stations, will be controlled by the distributed control system (DCS) from the main control room.
- There will be a separate high-level switch on each tank, if activated, a switch will close automated valves on all inlet lines to the tank.
- Each of the bunds will contain a rainwater sump with a sump pump, capable of sending contents to appropriate onsite facilities for treatment or disposal.

Tanker Offloading / Tank Filling:

- *'offloading areas will have berms, kerbs and suitably sealed road surfacing with sealed joints to isolate spills to prevent them from entering the drainage system or underlying soils'.*
- *'offloading areas for liquids will include' 'dry break couplings to avoid minor loss of containment when connecting/disconnecting hoses; and emergency breakaway couplings to safely decouple the hose from the offload station without spillage'.*
- Risk of strong reaction from accidental mixing of acid, organic and alkaline materials will be prevented by use of dedicated connection points (different sizes) for different tanks.
- Offloading areas will be designed above the level of adjacent tank farm bunds to ensure any spillages will drain into the bund and loss of tank contents within the bund will not backflow into the tanker.
- Existing standard operating procedures are in place for all bulk tanker deliveries, these will incorporate the new process and tank farms.
- *'The new roads constructed as part of the proposed development will be of Tarmac construction with drainage running into the existing stormwater drainage system'.*

IBCs and Small Container Storage:

- *'Filled IBC's and drums on pallets will be stored on bunded stillages within dedicated chemical storage areas within the production area'.*
- *'storage areas will incorporate impermeable concrete flooring and be located within the production building perimeter bund'*
- *'Materials stored will be grouped dependent on their compatibility, with a suitable separation being provided between non-compatible materials'*

Accidents and Spillages:

The existing operations include spill management and response procedures, with training in the implementation of these. *'The proposed new plant and processes will be incorporated into the existing onsite spill procedures. Regular inspections of surfacing will be undertaken in accordance with the site's environmental management system and maintenance procedures. If there is a spill it is collected in the appropriate area, sampled, and then cleaned up or directed to an appropriate containment / treatment system depending on its contents'.*

A detailed breakdown is also given for the new production process steps where storage of potentially polluting liquids may give rise to highest risk of loss of containment within the related buildings. Drainage design includes the use of internal floor drains, dedicated collection tanks and impermeable sumps to collect and contain spillages. Upon collection spilt contents are inspected and can then be discharged to a number of locations depending on content, these include: the waste water treatment plant, thermal oxidiser feed tank or aqueous waste tank.

Inspection and maintenance.

Leak detection and repair (LDAR) programmes are in place, *'DSM operates a safety management system in line with the requirements of an upper tier COMAH site, which will be updated to incorporate the transfer and handling of liquids used in the proposed process.'*

'Systems to manage and maintain transfer systems will be entered into the DSM's existing PPM system, which will include risk-based inspection plans.'

'As part of the onsite PPM system, tanks will be subject to regular visual inspection and also periodic integrity testing to check for leaks. Tanks will also be fitted with low level and high-level alarms to monitor the content level.'

Considerations on transfer and handling techniques.

BAT refers to new pipework being aboveground and maintenance programming based on risk and reliability approach,

'All outdoor pipework for the new process plant will be above ground in closed pipework. With the exception of a concrete duct that carries utilities into the production building.'

'drainage will also comprise pipework located in a concrete open channel which will be accessible and also subject to periodic preventive maintenance inspection.'

BAT is to minimise the number of flanges by replacing them with welded connections, with specific consideration for bolted flange connections and prevention of corrosion –
'assessment of flanges .. have where possible been removed by design'.

'pipework will be installed to a high hazard pipe specification and include raised face weld neck flanges with gore IBC ring type gaskets',

'subject to regular inspection and maintenance by suitably licenced subcontractors',

'Pipework used for the proposed process will predominantly incorporate stainless steel design. Where this is not the case, a coating system will be applied to the pipework.'

Correct selection of pump and seal types for the process –

'The most appropriate selection of pumps and seals will be incorporated into the proposed process,'

'sign of the proposed process has been subject to full assessment of both safety and environmental risks'

Environmental Risk Assessment:

The application has included an environmental risk assessment document which gives consideration to a broad range of potential scenarios which may result in risk to the water environment.

Each scenario identifies the relevant hazard, pathway and receptor, with qualification that the most appropriate control measures and response plans are in place.

This document confirms the application of the techniques listed above.

Examples scenarios include;

- *'Loss of primary containment from road tankers during offloading - hose / gasket / connection failure / transfer of pumps'.*
- *'Spillage whilst moving containers within buildings.'*
- *'Pipework transfer between tank farm and either the Production Building or Off Gas and Liquid Treatment Unit'*
- *'Chemical storage – Tank Farms Spillages to ground / Indoor Spillages to ground'*
- *'Fire on the new plant and equipment.'*

SEPA Comment:

During a visit to the site on 29th October 2024, SEPA officers discussed the design specifications of the containment and bunding measures with site staff responsible for the design and construction of the new process. SEPA queried the specification of the tank farm bunds and if the bund wall design included water stops for the joins. On review of the application, there was reference to the best practice CIRIA 736 manual, with bund sizing and acid resistant coating, however no mention of the design including water stops for any bund joins.

A response to this query was received from the operator on 18th November 2024. The response included an email from the process engineer confirming the following:

"The small chemical bunds in the off-gas & liquid waste treatment plant do not have water stops. They are not required to make the bunds watertight as this will be achieved by the resin coating that will be on all horizontal and vertical surfaces inside the bund. There are no flammable materials present in any of these bunds. For this reason, it has not been deemed necessary to ensure that fire resistant water stops are included in the bund design.

The main tank farm bunds do have water stops (– engineering drawing provided)

As the spec shows, the water stops have a service temperature range up to 70°C so they are not fire-resistant. Again, there are no flammable materials present in any of these bunds, so it has not been deemed necessary to ensure that fire resistant water stops are included in the bund design.

As with the off-gas plant bunds, the water stops are not actually necessary for preventing water escape from the bunds as the bunds are going to have the Kemtile chemically-resistant resin lining on the vertical walls which will make the bunds watertight, but they were added as a low cost belt-and-braces measure.

The integrity of the bunds can be tested during commissioning by filling with water and checking the outer walls for damp patches. This cannot be done for the full bund as some walls are sunk into the earth, but enough of the bund will be able to be inspected to ascertain if there is a problem with waterproofing".

Summary

The operator provided a demonstration that the existing drainage arrangements and proposed infrastructure & processes are fit for purpose and continue to comply with BAT. A high level of environmental protection will be in place.

Existing permit conditions with regard to protection of soil and groundwater, environmental critical items will not require variation and remain applicable to the new production process.

5.4 Noise

The amendment to the existing site activities has been considered in detail by the operator. A number of documents have been included in the application which discuss the potential noise emissions from the new processes and give justification concerning any potential for increased noise levels and how these will be minimised and managed. There is also a detailed assessment relating to compliance with relevant BAT (application document Appendix F), this covers noise and vibration emissions where applicable.

In summary noise emission considerations are discussed in the following supporting documents:

Noise Impact Assessment

"A noise impact assessment in accordance with BS4142: 2014 has considered the potential risk to human receptors to noise that may be generated from the proposed animal feed additive production and distribution facility."

Noise Management Plan

"DSM have chosen to prepare a Noise Management Plan (NMP) to provide additional assurance that amenity will be protected. The NMP refers to the results of the BS4142:2014 assessment and outlines how DSM will:

- Identify and employ 'all appropriate measures' to minimise the generation of noise and subsequent exposure / impact;*
- Prevent exposure of people outside the site to levels of noise which would result in complaints; and*
- Minimise the risk of unplanned 'noisy' events which have the potential to result in offsite noise complaints."*

Environmental Risk Assessment

“The ERA has considered the risks posed by the facility to the environment. It includes assessment of relevant environmental impacts for each of the proposed changes, in accordance with SEPA guidance ‘IED-PPC-TG4 - Pollution Prevention and Control (PPC) Technical Guidance: A practical guide for Part A activities.’”

With the consideration for all BAT requirements, design, technology and abatement selection the environmental risk assessment summarises the anticipated impact and states the following:

“Due to the potential for the proposed activity to increase noise levels in the area SEPA has requested the PPC Permit application include a:

- *Noise Impact Assessment (NIA) (428.012990.00001_NIA); and*
- *Noise Management Plan (NMP) (428.012990.00001_NMP).*

The NIA identified:

- *That the daytime predicted cumulative specific sound level exceeds the background noise level by a maximum of 3 dB, at one offsite receptor;*
- *The night-time predicted cumulative specific sound level exceeds the background noise level by a maximum of 12 dB, at a second offsite receptor; and*
- *The impact of the proposed activity on the surrounding area and noise-sensitive receptors is considered low as the predicted cumulative specific sound level remains less than 1 dB higher than the predicted existing specific sound level at all receptors considered.*

The conclusions of the NIA found that potential risks to offsite sensitive receptors are considered to be low. However, DSM have chosen to prepare a NMP to provide additional assurance that amenity will be protected.

The NMP has been prepared in accordance with the SEPA guidance and refers to the results of the NIA. The NMP will:

- *Identify and employ all appropriate measures to minimise the generation of noise and subsequent exposure / impact;*
- *Prevent exposure of people outside the site to levels of noise which would result in complaints; and*
- *Minimise the risk of unplanned ‘noisy’ events which have the potential to result in offsite noise complaints.”*

Best Available Techniques / Operating Techniques

“This Best Available Technique and Operating Techniques (BATOT) document describes how the new animal feed production and distribution facility has been designed and will be operated in accordance with Best Available Techniques (BAT) as described in Scottish Environment Protection Agency (SEPA) guidance and relevant European Union Best Available Techniques Reference (BRef) notes.”

Appendix F – BAT Demonstration

This documents provides justification for “sector specific demonstration of compliance with the specific BAT requirements of the sector guidance and applicable BRef Notes / BAT Conclusions”. Specific discussion relating to the management of noise emissions and technology selections is discussed relevant to each of the following publications;

- Organic Fine Chemicals BATc / Production of Speciality Organic Chemicals Sector (EPR 4.02)
- Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc
- Common Waste Gas Management and Treatment Systems in the Chemical Sector BATc
- Emissions From Storage BATc
- Energy Efficiency BATc
- Industrial Cooling BATc

SEPA Comment:

The proposed variation to operations is not predicted to noticeably alter the noise impact in the local community (and the absolute levels remain below World Health Organisation community noise guidelines).

Assessment of the information related to the application of BAT was assessed by SEPA Noise Specialist and the following comment was made *'the Applicant has not provided sufficient detail to demonstrate that they have employed BAT to minimise emissions (see some examples noted in attached document). A more detailed BAT demonstration is still required'*. Specific commentary was in relation to the specification of potentially noisy equipment and the optioneering process to determine BAT is in place.

SEPA provided this feedback to the operator and it was agreed that additional information related to the acquisition of process for new equipment was to be provided for the assessment. This information was to include documents and procedures relating to general equipment standards, technical requisition processes and bid appraisals related to equipment noise.

This information was provided to SEPA on 18th November 2024 in the form of a selection of design criteria and bid evaluation documents.

The following types of justifications to the query were included:

“Equipment Selection – Noise

An assessment of potential noise impacts resulting from the operation of the CC3 plant has been undertaken and included with the application (428.012990.00001_NRA). The plant equipment noise power levels used in the modelling assessment were selected based on the reasonably achievable noise power levels for each type of plant.

Noise was considered as an integrated part of the design process and noise targets were included in all plant specifications and reviewed during the equipment and supplier selection process. The noise targets set within the plant specifications were in some cases lower than those used in the noise impact assessment in an effort to challenge suppliers to drive down the noise emissions from plant equipment where reasonably practicable and hence further reduce the noise impacts arising from the CC3 plant. As an example, DSM has provided details on the chilled water package which includes compressor plant with potential noise implications”.

“User Requirement Specification (URS) - Chilled Water 3°C Package

DSM also prepared a specific user requirement specification documents for certain of the key bigger plant packages including the chilled water package. Section 7 of this report includes the required noise specification of less than or equal to 72 dB(A) at 1m distance. This tighter performance target was set based on initial communications received from a supplier who believed they could achieve this lower noise level (which was later determined not to be the case).”

“Technical Requisition - Requisition for Chilled Water Package(s)

The requirements of the URS were then included in the technical requisitions issued to potential equipment suppliers. Noise requirements are referenced in various sections of this document with specific noise targets stipulated as being 72 dB(A) at 1 metre from any part of the equipment. On Page 26 of the requisition, item no 23 in the table, the noise limit of 72 dB was challenged by the supplier as being unachievable, and you will see that DSM agreed that it could accept 78 dB in this case - noting that this is still lower than the 80 dB that was assessed in the noise impact assessment.”

SEPA Noise specialist assessment also determined that the Noise Management Plan is substantially short of what is required and needs an overhaul. Section 3 of the submitted NMP document has quoted some of the UK Environment Agencies Guidance – however, the document does not demonstrate that the guidance has been followed. The Applicant needs to look again at their NMP and follow the advice provided in Section 5 of the [UK Environment Agencies guidance](#). The NMP improvement feedback were not made specific to the variation and will apply across the installation as a whole. These findings

will be provided to the operator and will be followed up as part of routine regulatory interactions for the installation.

There is no recent history with regard to noise complaints associated with the installation.

Assessment recommends a condition is placed in the Permit to ensure that a post-commissioning acoustic survey takes place to report on whether there are any deviations to the expected emissions outlined at the Application stage.

Demonstration of BAT in relation to the minimising noise emissions in both design and operation has been demonstrated across the provided documents and supporting information.

New permit conditions shall be included with regard to requirements for a Noise Management Plan and undertaking a post commissioning acoustic survey.

5.5 Resource Utilisation

BAT Justification:

The application refers to resource utilisation and the following related guidance;
Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.
Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc.
Energy Efficiency BATc / Bref 2009

The following information summarises the techniques related to resource utilisation and have been compiled from the following application supporting documents;

- 'Best Available Techniques / Operating Techniques'
- 'Appendix F– BAT Demonstration'

Selection of the Production Process:

The application also provides a discussion on the merits of the proposed phased 3 step manufacturing approach for the intended product. It is compared to that of a 1 step approach carried out by a European competitor. The summary is the 3 step process is significantly more complex with regard to process, however is estimated as twice as efficient in product yield and ultimately results in lower overall environmental impact. An estimation of energy and material consumption savings is provided which indicates significant resource benefit from the selected methodology, these benefits apply to energy, raw material & solvent use and reduced waste production.

Water use

The Application States;

- *'The maximum recorded flow rate of mains water consumed by the existing DSM Dalry site in the years 2019 to 2022 was 328m³ /hr (91 L/s) and the average was 264m³ /hr (73 L/s).*
- *The proposed process will require an additional maximum flow rate of 24m³ /hr (7 L/s) and an average increase of 16m³ /hr (5 L/s).*
- *This water will be used in the process for cleaning and for the evaporative cooling towers*

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

BAT 1 – Managing your activities.

Inc. Environmental Performance Indicators:

– the application states;

- *'The site operates an Integrated Management System that is certified to ISO 14001 by BSI'.*

- 'DSM will set key performance indicators (KPI's) which will include review of product yield, energy use and other relevant KPI's. These will be reviewed periodically and used to set future efficiency targets'.
- 'DSM will also review anticipated environmental key performance indicators as stipulated by the PPC permit variation on an annual basis' (this includes water consumption).

BAT 1 - *Efficient use of raw materials and water:*

Inc. Where water is used in direct contact with process materials, recirculate the water after stripping out the absorbed substances.

– the application states;

- The site cooling water system is a recirculating system with three evaporative cooling towers.
- Process cooling is via indirect heat exchanger systems.
- Purging of water from this system will be controlled to minimise water usage.

Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc. Water Usage and Waste Water Generation

BAT 7 – *reduce water usage and generation of waste water (reuse of waste water).*

– the application states;

- Use of solvents as substrate (rather than mains water).
- Production process and required cleaning are planned to minimise frequency and potential waste accumulation and water usage.

SEPA Comment:

The operator has provided adequate information to justify that the proposed changes to the operation will meet the requirements of relevant BAT conclusions for the industry.

Existing permit conditions concerning resource utilisation will not require to be varied in relation to the proposed new manufacturing process.

Energy use and generation

The Application includes a breakdown of the changes in energy usage related to the new process;

'Additional Steam Demand – 6% of existing sitewide usage;

- *Additional Gas Import - 22,720,000 kWh (an increase of 4%);*
- *Additional Site Electricity Used on Site – 9,848,000 kWh (an increase of 13%);*
- *Additional Site Electricity Import 0 kWh – i.e. all electrical demand will be supplied by onsite generation or other non-grid power supply agreements''*

New emergency generator

The emergency generator will not be in regular use and is anticipated to operate for less than fifty hours per year (for testing purposes only). As a result it has not been considered as part of an assessment of energy use or generation.

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

BAT 1 – *Environmental Performance Indicators:*

Inc. Energy efficiency.

'large processes are major users of heat and power' 'greater opportunities for optimising energy efficiency'

'Assess the environmental impact of each process and choose the one with the lowest environmental impact.'

– the application states;

- The site monitors the use of gas and electricity as KPIs (Key Performance Indicators), setting reduction targets as part of the site Environmental Management System (EMS).
- Should the consumption KPIs increase, an investigation and rectification measures would be initiated.

- The new process activities will be part of this energy management system.
- The proposed process has been designed to incorporate energy efficient equipment where possible to minimise the additional energy use at the site. Heat recovery and energy efficiency systems for the new process are detailed outlined in Section 2.7.4 of the main BATOT document. Common measures include heat recovery from waste water, condensate, receiver tank(s) and off gases.

Energy Efficiency BATc / Bref 2009

The application has provided a detailed justification as to how the existing operations and processes at the installation comply with the techniques listed in the 2009 sector guidance / cross cutting BAT conclusions.

Almost all aspects of the BATc have relevance to the processes and for reference a summary of the most relevant techniques is listed below.

- Energy efficiency management – *‘DSM has implemented an energy management system in accordance with BAT 1, which will be updated to incorporate the proposed process’.*
‘A monthly report is submitted to DSM at a group level which allows benchmarking across all of the DSM Plants, the proposed new plant will be incorporated into this process’.
- Continuous environmental improvement – The application documents provides a wide range of evidence as to how the operator includes environmental performance as part of the ongoing management of the process. This approach was applied to the selection of the new production process including the selection of the primary process solvent and if suitable alternatives were viable.
- Identification of energy efficiency aspects of an installation and opportunities for energy saving, i.e audits specific to energy efficiency, energy use quantification.& optimisation - *‘DSM operates under the Energy Savings Opportunity Scheme (ESOS) scheme which requires an energy audit every four years at the site. The application of the ESOS scheme will be expanded to include the proposed process’.* *‘The new plant has been designed to incorporate energy efficiency in the plant equipment selection’.* *‘DSM uses an energy inventory to track energy use and use estimates and calculations to derive opportunities to optimise energy use on site’.*
- Systems approach to energy management – *‘DSM’s energy management system continually looks at how energy efficiency can be introduced to the whole site. This is driven by the weekly energy review meetings’.* *‘to maximise heat recovery from hotter process streams where possible and transfer the heat to other areas of the process, in line with the company’s sustainability goals’.*
- Energy-efficient design (EED) – *‘The 3-step process has been selected as opposed to the existing 1-step manufacturing process as, although it is a much more complex process route, it is almost twice as efficient in chemical yield’.*
- Co-generation – *‘An existing site CHP will be used to power and provide heat to the proposed process.’*
- Electrical Power Supply – *‘DSM’s equipment for the proposed process will be operated in accordance with the manufacturers specifications which include minimising periods of equipment using idle motors or operating the equipment above its rated voltage. Energy efficient motors are used as standard when replacing equipment’.* *‘Through the PPM programme, old motors will be replaced with the most efficient suitable ones available’.*
- Pumping Systems – *‘Pumping systems have been designed/specified to the correct sizing’.* *‘All pipework has been designed to the correct diameter for the designated activity and pipeline layouts designed to minimise the need for bends and valves’.*

- Drying, separation and concentration processes – *‘The proposed process has been designed with a view to maximise heat recovery from hotter process streams where possible and transfer the heat to other areas of the process’.*

Industrial Cooling BATc / Bref

The application has provided a detailed justification for the selection and operation of the proposed cooling systems and ensuring compliance with relevant BAT.

Most relevant techniques are listed below:

- Reduction of the level of heat discharge by optimization of internal/external heat reuse – *‘The plant has been designed with a view to maximise heat recovery from hotter process streams where possible and transfer the heat to other areas of the process, in line with the company’s sustainability goals’.* – Detailed description of the proposed heat recovery systems is provided in the BATOT document.
- Reduction of Energy Consumption – *‘selection of the cooling systems has been carefully reviewed during the design process to ensure that they meet the required operational duties and provide an optimum balance between functionality, energy efficiency and potential offsite impacts’.* *‘most energy efficient equipment has been selected in alignment with DSM’s sustainability goals’.*

SEPA Comment:

The operator has provided sufficient information to justify that the proposed changes to the operation will meet the requirements of relevant BAT conclusions for the industry.

Existing permit conditions concerning the resource utilisation will not require to be varied in relation to the proposed new manufacturing process.

Raw Materials Selection and Use

The Bovaer process is a staged process that involves the synthesis, blending and formulation of active ingredients (raw materials) into the desired final animal feed additive product. In order to undertake this process, specific raw materials, fuels (energy) and water are required.

Best Available Techniques / Operating Techniques’

This document discusses the selection of the primary process solvent and states the following:

- *‘this does not fall under the requirements of Article 58 of the Industrial Emissions Directive i.e., the requirement to substitute or replace the use of such materials “as far as possible by less harmful substances of mixtures within the shortest possible time’.*
- *‘DSM has investigated the viability of using alternative solvents, however, no suitable alternatives were found’.*
- *‘is the preferred solvent’ (technical reasons are provided) - : ‘replacement is only possible with equally concerning solvents) and the use of such alternatives is anticipated to lead to lower yield’.*
- It is noted that the various abatement systems on site are given to be effective in preventing release of the selected solvent.

Site Condition Report – Appendix B.

Details of all raw materials associated with the new production process are provided in the site condition report. This document compiles a list of all raw materials and highlights which chemicals are considered to be relevant hazard substances, CLP listing (classification labelling and packaging regulations) are also provided.

Process Substances

- A total of 33 separate substances (including aqueous waste and finished product) are involved in the process.

- Substances range from; water, diesel, natural gas, thermal oil, deionised water, corrosion inhibitor, biocide, condensate, dichloromethane, acids, urea, silica, sodium hydroxide (the comprehensive list is available in the site condition report).
- CLP Hazard classifications include; flammable substances, acute toxic (including aquatic), skin irritant, eye irritant, skin corrosion / irritation, carcinogenic (the comprehensive list is available in the site condition report).

Process Inventory

- 1391 tonnes of all substances '*based on volumes of main vessels and process equipment items*'.
- Substances of most significant potential volume are dichloromethane (146 tonnes), acids (250 tonnes), silica (150 tonnes), urea (50 tonnes), (the comprehensive list is available in the site condition report).

COMAH (control of major accidents and hazards) Regulations 2015.

- The inventory provided lists substances that are classified as a dangerous substance under the COMAH regulations.
- A specific inventory for all COMAH substances is provided, differentiating all 'categorised dangerous substances' and 'named dangerous substances'.
- Under Regulation 10 of the COMAH regulations ('Review of Safety Reports'), the operator has submitted a modification to the DSM establishment safety report to ensure major accidents related to the new process have been adequately considered and controlled (see section 7 for more information).

Location & Storage

A detailed breakdown of the production steps and the applicable raw materials is included in the application. A location plan for the new production process and primary buildings and infrastructure is included in the site condition report – appendix D. This includes the locations of all tank farms / bunding, tanker unloading area and production buildings required for the necessary storage and handling of raw materials.

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

BAT 1 – Managing your activities, Storage and handling of raw materials, products and wastes. Use HAZOP studies to identify risks to the environment for all operations involving the storage and handling of chemicals and wastes;

The application states;

'A Control of Substances Hazardous to Health (COSHH) assessment is undertaken prior to the use of chemicals, and if the chemical is found to present a hazard to health, it is added to the COSHH inventory.'

'Material Safety Data Sheets (MSDS) for any potentially hazardous materials or chemicals is kept on site together with the COSHH register. The MSDS provides information on how chemicals should be handled, stored and disposed of, and what to do in the event of an accident.'

Section 5.3 above (fugitive emissions to water) provides detailed information on the appropriate storage of all listed substances, ensuring appropriate BAT is in place and that relevant chemical compatibility, surfaces, containment, process controls and bunding arrangements have been considered.

SEPA Comment:

The operator has provided sufficient information to justify that the proposed changes to the operation will meet the requirements of relevant BAT conclusions for the industry.

Existing permit conditions concerning raw materials will / will not require to be varied in relation to the proposed new manufacturing process. The operator will continue to monitor and periodically review all of

resources used at the installation. Assessments will continue to require consideration of methods to reduce material losses and improve resource efficiency.

5.6 Waste Management and Handling

Waste Minimisation, Handling, Recovery or Disposal

The application discusses a number of matters related to the management of wastes produced at the site.

A breakdown of the estimated primary waste streams, volumes and intended destinations is provided below;

Waste Stream	Volume (per year)	Destination
Solid waste product Off specification final product	To be minimised through correct operation of the plant and re-work of off-spec product if required.	Existing site waste disposal routes for waste product.
Metal scraps collected by magnet.	1 kg/yr	Collected and recycled off site.
Effluent	88 kg/h at worst case for process acid(s).	Sent to landfill or land remediation (depending on availability)
Waste water treatment plant activated sludge	33% increase on previous annual tonnage	Sent to landfill or for land remediation (depending on availability)
Pallets from incoming goods	Approx. 12,000 wooden pallets	Collected and recycled / reused off site.
Poly propylene bags	Approx. 12,000 Bulk bags	Opportunity identified for local recycling
Packaging wrapping	TBC	Existing site waste disposal routes
Dust collected in dust filters	<3,285kg	Waste disposal as no recycling or incorporation back into the product is possible.

The application confirms that all '*wastes generated by the new process will be managed in accordance with existing site procedures. The site, as a whole, selects appropriate offsite waste recovery / disposal routes to select waste management options that as high up the Waste Hierarchy as possible*'.

Wastes generation by the process will be minimised through appropriate design and control of the process to optimise product yield. The plant includes the option to rework off-spec products to minimise the generation of waste'.

'The site meets regularly to set and monitor key performance indicators and targets. Waste generation is tracked and monitored as a specific metric (as tonnes waste/tonne product) and waste minimisation projects may be initiated if deemed appropriate.'

The application also states that the majority of a high concentration acid solution produced from the process will be taken off site for treatment at a suitably licensed facility. The operator will explore opportunities for recovery of this material if viable.

Incineration of Waste Primary Process Solvent:

During the operation of the process, the Primary Process Solvent will accumulate undesired biproducts from the chemical synthesis. To ensure the product is manufactured in specification a quantity of the recycled solvents will be purged to the off gas and liquid waste treatment plant and replaced with fresh

solvent. Consideration has been given to the viability of purifying and reusing the purged Primary Process Solvent (DCM); however, this has not been selected for the following reasons': These include the lack of recycling facilities onsite, safety issues associated with impurities in recycled solvent. Onsite destruction is preferred due to limited companies that can be outsourced for this task, and the existing requirement for an off gas treatment unit for the process allows the onsite destruction of process solvents.

Organic Fine Chemicals BATc / (Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector).

BAT 1 – Managing your activities -

Avoidance, recovery and disposal of wastes:

Waste should be recovered unless it is technically or economically impractical to do so – 'Wastes generation by the process will be minimised through appropriate design and control of the process to optimise product yield. The plant includes the option to rework off-spec products to minimise the generation of waste'.

Storage and handling of raw materials, products and wastes. Use HAZOP studies to identify risks to the environment for all operations involving the storage and handling of chemicals and wastes.

'A Control of Substances Hazardous to Health (COSHH) assessment is undertaken prior to the use of chemicals, and if the chemical is found to present a hazard to health, it is added to the COSHH inventory.'

BAT 3 - Emissions and monitoring

Monitoring and reporting of waste emissions:

Monitor and record: the physical and chemical composition of the waste. Its hazard characteristics. Handling precautions and substances with which it cannot be mixed.

'All wastes generated by the new process will be managed in accordance with existing site procedures. The site as a whole selects appropriate offsite waste recovery / disposal routes'.

'DSM will record the volume and destination of onsite waste streams in accordance with Waste Duty of Care Regulations. In accordance with their obligations as a producer of waste'.

Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc.

Water Usage and Waste Water Generation

BAT 13 – Waste:

To prevent or, where this is not practicable, to reduce the quantity of waste being sent for disposal, BAT is to set up and implement a waste management plan.

'All wastes generated by the new process will be managed in accordance with existing site EMS procedures. The site as a whole selects appropriate offsite waste recovery / disposal routes'.

BAT 14 – Waste Water Sludge:

To reduce the volume of waste water sludge requiring further treatment or disposal, and to reduce its potential environmental impact, BAT is to use one or a combination of the techniques. conditioning, dewatering, stabilisation, drying..

'Existing WWTP B46 incorporates sludge dewatering techniques which will not change as a result of the application for permit variation'.

SEPA Comment:

Incineration of Waste:

The decision to incinerate liquid waste solvent is discussed in more detail in Section 5.2 emissions to air.

Management of Waste:

Existing standard permit conditions concerning the management of waste will / will not require to be varied in relation to the proposed new manufacturing process. The operator will continue to monitor and periodically review all of resources used at the installation. This includes material losses and the

generation of waste. Assessments will continue to require consideration of methods to reduce material losses and waste and improve resource efficiency.

5.7 Management of the site

Environmental Management System

The following information summarises the techniques for environmental management systems and have been compiled from application supporting documents;

- 'Best Available Techniques / Operating Techniques'
- 'Appendix F– BAT Demonstration'

Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc. Water Usage and Waste Water Generation - BAT 1 specifies the requirement for operators to implement an Environmental Management System to improve overall performance.

'The site operates under an EMS which is certified to international standard ISO 14001:2015. The proposed manufacturing facility will be managed in accordance with the existing EMS, which will be expanded to include the requirements of the new plant'.

'Internal system audits are undertaken on a periodic basis by DSM and their frequency are defined on the internal audit plan and based on relevant risk assessment. Audits are scheduled over 12 months'.

Accidents and their Consequences

The applicant has outlined a number of measures to implement, identify, assess and minimise environmental risks and to prevent/minimise the occurrence and consequences of accidents.

COMAH (control of major accidents and hazards) Regulations 2015.

The existing PPC process is an upper tier COMAH establishment and the operator has applied under Regulation 10 of the COMAH regulations to modify the existing site safety report to incorporate the changes related to the proposed process.

- SEPA officers have reviewed the Regulation 10 modification report and provided feedback on this to the operator via the competent authority colleagues in the HSE (health and safety executive).

Under the general requirements of COMAH a number of procedures and emergency plans are required in order to ensure the safe management of the process and associated dangerous substances. The application lists a number of procedures related to accident prevention and emergency response, these are equally applicable to the requirements of BAT under the PPC regulation, a selection are listed below:

Major Accident Prevention Policy, Emergency Planning for Major Accidents, Safety Health Environment Policy, On Site Emergency Plan, Testing and Maintenance of Fire Alarm Systems, Management of Ducts and Tank Farms.

The application states *'These procedures detail the emergency response to be implemented in the event of an emergency including a spillage/leak or fire. Appropriate training will be provided to employees and contractor staff to ensure that response to an incident is prompt and efficient. Training will be updated to account for the process changes and new equipment installed as part of the proposed project'.*

The following information summarises the techniques for managing accidents and their consequences and have been compiled from application supporting documents;

- 'Best Available Techniques / Operating Techniques'
- 'Appendix F– BAT Demonstration'

Organic Fine Chemicals BATc / Sector Guidance Note IPPC S4.02 - Guidance for the Speciality Organic Chemicals Sector.

BAT 1 – Managing your activities
Accident Management.

This refers to the guidance prepared in relation to the COMAH regime being relevant to processes that are in COMAH scope or not. The DSM process is an upper tier establishment and the information above lists examples of the measures in place at the site.

Common Waste Gas Management Systems and Treatment Systems in the Chemical Sector BATc.

BAT 3 – Other than Normal Operation Conditions.

‘..Identification of potential OTNOC (e.g., failure of equipment critical to the control of channelled emissions to air, or equipment critical to the prevention of accidents or incidents..’

With regard to the new process, DSM state that procedures to manage abnormal conditions have been compiled in an OTNOC management plan. Following any OTNOC events, investigations and corrective actions will be undertaken and records kept and inspected.

Emissions From Storage BATc

BAT 24 (80) – Safety and Risk Management.

‘The site operates under a safety management system in line with its status as an upper tier COMAH facility.’

BAT 54 (57) – Inspection and Maintenance (Safety and Risk Management).

BAT is to apply a tool to determine proactive maintenance plans and to develop risk-based inspection plans – DSM state the safety management system will be ‘updated to incorporate the transfer and handling of liquids used in the proposed process’. ‘Systems to manage and maintain transfer systems will be entered into the DSM’s existing PPM system, which will include risk-based inspection plans’.

SEPA Comment:

It is not proposed to vary existing permit conditions related to controlling accidents and their consequences.

The existing permit includes a number of requirements to monitor and maintain critical plant and infrastructure to ensure the consequence of an accident or emergency is reduced. Permit section 3.8 refers to Environmental critical items and specifies requirements to maintain a register of items critical to ensuring compliance and mitigating against potential incidents.

Standard PPC incident reporting requirements conditions are still applicable to ensure incidents are recognised, reported and reviewed to reduce risk from the processes.

Closure

The existing permit conditions 2.9.1 to 2.9.4 require a Decommissioning Plan that must be prepared and maintained to allow the safe decommissioning / final cessation of the permitted activities.

Requirements include at least every four years the operator will review of the plan to update if necessary. Specific reference is made to this review process where there has been a substantial change at the permitted installation. The proposed new process qualifies as a substantial change and will trigger this requirement.

No amendment to the existing permit conditions is considered necessary as a result of the proposed changes.

5.8 Site Condition report

As required by PPC Regulations - Schedule 7, Part 1, paragraph 2 (1) ‘in respect of an application for a variation’ the operator has provided as part of the application an updated Site Condition Report to assess the risk to soil and groundwater receptors from the new process.

No additional land is being included at the permitted site, however the report identifies five relevant hazardous substances associated with the new process including, process solvents, biocide, diesel and anhydrous ammonia.

The report states to have been completed in line with SEPA’s PPC Technical Guidance Note 2 (Site Reports).

A history of the existing permitted activities at the site is included and an assessment of the current 'surrogate' baseline conditions. This has been based on a review of data provided by intrusive sampling conducted in 2020.

SEPA Comment:

SEPA contaminated land specialists provided the comments on the supplementary site condition report and assessment of the new process. A report was provided on 24th September 2024 which summarises the assessment and requested further information as follows:

- i. The factual information report / interpretation described under Appendix A (PLQRA) and B (LRQA) appendices. All supporting appendices are required in line with SEPA guidance IED-TG-02 Site reports.
- ii. A drawing showing the areas where RHS are used, stored, and produced and the relevance of the factual information gathered during ground investigation.
- iii. Two cross sections for the site with the available ground investigation data.

This information was provided on 11th November 2024 as part of a response to a further information notice issued on 8th October 2024. The further information was passed to SEPA contaminated land officer update to the site information records.

5.9 Monitoring

Air

The authorisation of the new process will require the inclusion of two new emissions points to air within the existing permit:

- off-gas liquid treatment unit.
- emergency generator.

The permit will require to be updated to include emissions to air monitoring requirements to include the new emission points and related substances in line with BAT and IED Chapter IV Annex VI.

Off-gas liquid treatment unit.

The application proposes that the monitoring changes be made in line with BAT for the process:

- EU BAT Reference Document –Monitoring of Emissions to Air and Water from Industrial Emissions Directive Installations (ROM)- July 2008.
- The requirements of the 2008 document align with those set out in the more recently published Common Waste Gas Management and Treatment Systems in the Chemical Sector (WGC)
- These requirements are mirrored in the draft (at time of writing) UK WGC BAT-conclusions document.

Substances that are identified in the application as requiring to be monitored are listed in the table below:

Substance	Estimated Emission	BAT Emission CEMS Threshold
NH3 (Ammonia),		-
CO,	0.05kg/h	>2kg/h
DCM (Dichloromethane),		-
Cl (Elemental Chlorine),		-
HCl (Gaseous chlorides),		-
NOx,	0.199kg/h	>2.5kg/h
TVOC,	0.02kg/h	>2kg/h
PCB (Polychlorinated dibenzo-p-dioxins and -furans).		-

Continuous Monitoring of Emissions:

- Substances that may require continuous monitoring of emissions (CEMS) in line with WGC BAT are: TVOC, NOx and CO.
- Emissions to air from the Off-gas liquid treatment unit have estimated mass emissions significantly below the recommended thresholds in BAT WGC for when continuous monitoring applies. However due to the implications of liquid waste incineration proposed by the operator the minimum continuous monitoring requirements set out in IED Chapter IV have been applied, see section 5.2 for more information.

Spot Sampling of Emissions:

- A Summary of proposed monitoring requirements by the operator, are in line with WGC BAT and specific to each identified substance, these are listed below;

Substance	Periodic (Spot Sampling)
Total Volatile Organic Compounds - BAT-AEL does not apply.	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
Dichloromethane - BAT-AEL does not apply.	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
Hydrochloric Acid - BAT-AEL does not apply.	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
Chlorine - BAT-AEL does not apply.	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
Nitrogen Oxides -	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
Carbon Monoxide - BAT-AEL does not apply	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
Ammonia	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable
PCDDF & dioxin-like PCBs.	Proposed - at least once every 3 months for the first year of operation to confirm the emission levels. The minimum monitoring frequency may then be reduced to once every 6 months if the emission levels are proven to be sufficiently stable.

Emergency Generator

The emergency generator is a 1.12MW net rated thermal input combustion plant and will require to be regulated under the requirements of the Medium Combustion Plant Directive (MCPD) which govern the regulation of combustion plant sizing 1MW to 50MW net rated thermal input. These requirements were transposed into the PPC regulations in 2017.

The application states '*As the emergency generator will only be operated for <50 hours per year, it meets the requirements for an exemption to meet the MCPD prescribed emission limits*'. '*However, DSM will still have requirements to periodically monitor the diesel emergency generator for NOx and CO (as per SEPA MCPD guidance)*'.

SEPA Comment:

Off-gas liquid treatment unit.

The proposed monitoring methods and frequency in the application are in line with WGC BAT and including (draft) future UK BAT WGC for the sector.

The decision to incinerate liquid waste solvent and the implication on monitoring requirements in relation to Chapter IV of the IED is discussed in more detail in Section 5.2 emissions to air.

Higher frequency (quarterly) monitoring requirements have been required in the permit for the first 12 months of operation to accurately understand the process emission levels.

SOx (Sulphur Oxides) appear to be missed from the listed monitoring requirements in the application but are discussed with regard to BAT-AELs. Sulphur Oxides are identified as an emission from thermal treatment within the BAT document. An estimated emission is provided in the application for SOx. SOx will be included in the monitoring of emissions to air monitoring requirements.

SOx (Sulphur Oxides)	<0.149kg/h	>2.5kg/h
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Emergency Generator.

SEPA internal guidance on the permitting of MCPD plant will be followed to ensure the appropriate regulatory control over the emergency generator. This includes the requirements to periodically monitor emissions covered by the limited hours exclusions (under Article 6(3) of the MCPD directive. Monitoring requirements will be for CO.

Removal from the PPC Permit of existing Boilers 1 & 2 and Temporary Boiler (4 of).

See section 4.3 - the operator has requested in writing that existing Boilers 1 and Boiler 2 and temporary boilers 1 to 4 and any related reference to these be removed from the PPC permit.

Any permit conditions and references to the redundant boilers identified in the request shall be removed from the permit as part of the variation notice.

Permit schedule 1 & schedule 5 and associated tables shall require updating as part of this requirement.

Water

The application states that *'the addition of the wastewater effluent streams to WWTP B30 and WWTP B46 will not add significant loading that will result in exceedances to the current Scottish Water discharge consent (refer Appendix C) or the emission limits for discharge to sewer outlined in the original PPC permit. DSM will continue to monitor wastewater effluent in accordance with the existing emission limits in place'*.

It is not proposed to include any new substances or amend the ELV's associated with the combined effluent discharge to sewer from the process.

See section 5.3 for more information.

Chapter IV Waste Incineration Requirements Relating to Water Polluting Substances:

Due to effluent emissions from the Bovaer process potentially including emissions related to the incineration of waste, after consultation with SEPA Legal staff it was confirmed that:

PPC Regulation 29(1) (a) concerning the Schedule 1 conditions: incineration and co-incineration of waste states that SEPA must ensure that a permit granted or varied for the incineration or co incineration of waste contains *'such conditions as SEPA considers necessary'* to give effect to the provisions of chapter IV and Annex VI of the IED.

The decision was made to for the permit to be varied and an information gathering approach applied to the monitoring of effluent produced for the first 12 months of operation. The standard monitoring requirements set out in Annex VI Part 6 Section 3 have been included in the permit required for all potential water polluting substances from the Bovaer process.

The operator will be required to provide a report assessing the data obtained by the high frequency spot sampling of emissions and requirements for monitoring under Section 3 in order to support a potential reduction in frequency justified by a SEPA initiated variation at a later date

Soil and Groundwater

No soil and groundwater monitoring requirements shall be included as part of this variation.

Consultation with SEPA contaminated land officer confirmed that the most appropriate time for changes to permit requirements relating to environmental monitoring shall be at the next permit review as this is applicable site wide.

Waste

There is no proposal to amend the existing monitoring requirements with regard to the management of waste at the installation.

Existing permit sections 2.5 (Resource Utilisation) and 3.4 (Wastes) include requirements to monitor the nature and quantity of generated waste, with additional requirements to periodically report to SEPA. The produced wastes from the new process will be required to be monitored by these existing requirements.

See section 5.6 for more information.

5.10 Consideration of BAT and compliance with BAT-Cs if appropriate

Under the requirements of Regulation 5 (1) of the PPC Regulations 2012, SEPA must ensure that it follows or is informed of developments in BAT and the publication of any new or updated BAT conclusions be followed.

The application has provided a BATOT (Best Available Technique and Operating Techniques) document to describe how the new production process will be operated in compliance with the specific BAT requirements of the sector guidance and applicable BRef Notes / BAT Conclusions.

It gives reference to the following:

- Organic Fine Chemicals BATc / Production of Speciality Organic Chemicals Sector.
- Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector BATc
Common Waste Gas Management and Treatment Systems in the Chemical Sector BATc
- Emissions From Storage BATc
- Energy Efficiency BATc
- Industrial Cooling BATc

From consideration of the information provided in the Variation application, SEPA believes that the operator will use all appropriate preventative measures against pollution, in particular through the application of BAT and that it is unlikely that significant pollution will be caused by the operation of this plant.

See each section for specific BAT justification and discussion.

Other Legislation:

SEPA must ensure that a permit granted or varied for the incineration or co-incineration of waste (with no threshold) contains such conditions as SEPA considers necessary to give effect to the provisions of Chapter IV and Annex VI of the Industrial Emissions Directive.

Ch.IV of the IED applies to waste incineration plants and waste co-incineration plants which incinerate or co-incinerate solid or liquid waste, and contains no de minimus threshold. Ch.IV therefore applies to all incineration plants, while Ch.II and the Waste Incineration BATc apply only to incineration plant above the threshold of >10tpd as set out in IED Annex I.

PPC Reg.29(1)(a)(i) requires that SEPA must ensure that a permit granted or varied for the incineration or co-incineration of waste (with no threshold) contains such conditions as SEPA considers necessary to give effect to the provisions of Chapter IV and Annex VI of the Industrial Emissions Directive.

SEPA has included permit conditions related to the incineration of liquid waste in the off gas and liquid treatment unit (thermal oxidiser) and required environmental monitoring based on Chapter IV requirements and AELs based on Common Waste Gas Management and Treatment Systems in the Chemical Sector BATc (WGC).

Tables X below provides a comparison between the various emission limits contained by the above legislation and the comparison corrects the WGC BREF to the reference conditions set out in the IED Chapter IV.

The comparisons show that for related pollutants the WGC has the tightest ELVs and provides the highest level of environmental protection.

Table X: Equivalency of WGC ELVs vs Chapter IV BAT-AELs .

Regime	(O2 Ref Cond)	NOx	SO2	CO	PM	VOC	NH3
IED Chp IV	11	200	50	50	10	10	10
WGC BATC	21	200	19	-	-	20	10
WGC @11%	11	96	9.1	-	-	9.6	4.8

6 Other Legislation Considered

Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994

Is there any possibility that the proposal will have any impact on site designated under the above legislation? Yes

If yes, provide information on the action and justification below:

Screening distance(s) used 15km – consultation provided to Nature Scot.

Is there any other legislation that was considered during determination of the permit (for example installations that may be impacted by the requirements of legislation involving Animal By Products, Food Standards, Waste, WEEE regulations etc). No

If yes, provide information on the legislation, action and justification below:

Officer -

7 Environmental Impact Assessment and COMAH

Guidance Notes:

The PPC Regulations require that under certain circumstances SEPA take into consideration the information in any statutory Environmental Impact Assessment carried out as part of the planning process or a Safety Report produced under the Control of Major Accident Hazards Regulations.

How has any relevant information obtained or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account?

No

How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account?

Due to SEPA resourcing issues the most recent version of the establishments Safety Report (2023) had not been assessed at the time of variation.

The new introduction of the Bovair process is classified as a Trigger Event under Regulation 10(2)(d) of the COMAH regulations and the operator was required to submit a modification to review the existing COMAH Safety Report

In September 2024 SEPA was provided a Regulation 10 Modification report. Comments on the assessment within the report were provided to the operator, these included observations related to incident escalation, flooding and climate adaptation. Any further information concerning modifications to the site processes and related COMAH requirements shall be addresses as part of SEPA's role as a competent authority.

Officer: -

8 Details of the permit

Guidance Notes:

All non-standard conditions should be discussed with an appropriate specialist and legal to ensure they are appropriate and enforceable.

All non-standard conditions and, in the case of a permit variation, changes to existing text, tables or diagrams should be outlined and justified below. Where a group of related conditions are included, these can be included in one section and a single justification provided. Justifications can be linked to sections above, and/or the draft permit/variation schedule.

Do you propose placing any non standard conditions in the Permit?	Yes
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8.1 Process Design, Operation and Maintenance

8.2.1 The Bovaer Animal Feed Additive process shall not operate unless the Bovaer Off Gas & Liquid Treatment Unit is operational.

8.2.2 The Bovaer Off Gas & Liquid Treatment Unit shall operate only via the route described in Figure 8.2.

8.2.3 The Bovaer Off Gas & Liquid Treatment Unit shall be designed, operated and maintained such that:

- a) the temperature of the flue gases exiting the thermal oxidiser is maintained at not less than 1100°C;
- b) the gas residence time in the the thermal oxidiser is not less than 2 seconds, even under the most unfavourable operating conditions anticipated;
- c) no waste shall be fed to the incineration plant unless the temperature in the thermal oxidiser has reached 1100°C; and,

8.2.4 The thermal oxidiser shall be equipped with at least 1 natural gas burner for start-up, shutdown and for maintaining combustion gas temperature.

8.2.5 During start up or shut-down or when the temperature of the combustion gas falls below the minimum temperature required by Condition 8.2.2 a) the auxiliary burner(s) shall not be fed with fuels which can cause higher emissions than those resulting from the burning of low sulphur gas oil to BS 2869 part 2, liquefied gas or natural gas.

8.3 Interlocks, Control Systems and Alarms

- 8.3.1 The natural gas burner specified in Condition 8.2.4 shall automatically control the temperature of combustion gases, after the last injection of combustion air, exiting from the thermal oxidiser falling below the temperature specified in Condition 8.2.2 a) when waste is being burned.
- 8.3.2 An automatic system shall be provided, maintained and tested to prevent waste liquid feed or process gases feed to the thermal oxidiser under the following situations:
- a) at start up, until the temperature specified in Condition 8.2.2 a) has been reached;
 - b) whenever the temperature specified in Condition 8.2.2 a) is no longer maintained; or
 - c) whenever the Continuous Emissions Monitoring Systems (CEMS) required by Condition 8.4.3 show that the corresponding ELV is being exceeded due to a disturbance or failure of the abatement system.
- 8.3.3 Controls and interlocks shall be provided, maintained and tested to ensure that, as soon as practicable, no waste liquid or process gases can be fed to the thermal oxidiser if:
- a) there is a failure or low speed alarm from both duty and standby fans supplying combustion air to the thermal oxidiser fails at the appropriate rate;
 - b) there is a failure or low speed alarm from both duty and standby induced draught fans not operating at the appropriate rate;
 - c) there is a stoppage, disturbance or failure of an abatement device that may result in any ELV specified in this permit being exceeded;
 - d) there is a loss of electrical power to the incineration process, or to any of its safety systems;
 - e) the temperature monitoring required by Condition 8.4.3 is not taking place;
 - f) subject to condition 8.3.5, any of the continuous monitoring devices required by Condition 8.4.3 show that the corresponding ELV is being exceeded;
- 8.3.4 In the event the continuous monitoring required by Condition 8.4.3 is not taking place, the Operator shall;
- a) immediately cease to incinerate liquid waste and;
 - b) shall restore normal operation of the failed equipment, or replace the failed equipment as rapidly as possible and;
 - c) under no circumstances, continue to incinerate process gases for an uninterrupted period of more than four hours.
- 8.3.5 In the event that any of the continuous monitoring devices required by Condition 8.4.3 show that the corresponding ELV is being exceeded, the operator shall;
- a) immediately cease to incinerate liquid waste and;
 - b) shall restore compliance with the corresponding ELV as rapidly as possible and;

c) under no circumstances, continue to incinerate process gases for an uninterrupted period of more than four hours

Justification:

These conditions are required to ensure the operation of the off-gas and liquid treatment unit, and specifically the thermal oxidiser (which is combusting waste liquid solvent) meets the requirements of IED Article 50 (Operating Conditions of Waste incineration plants).

These requirements were discussed with SEPA legal for comment and acceptance.

8.4 Air Emission Conditions and Limits

8.4.7 The operator shall provide a report to SEPA within 2 months of the completion of the first 12 months quarterly monitoring required by permit condition 8.4.3. The report shall be titled 'Air Polluting Substances -The Assessment of the need for the continuous monitoring. The report will summarise all monitoring data provided by permit condition 8.4.3 and provide justification for the need to continue monitoring emissions to air of SO_x TVOC, PM, HF and Heavy Metals at the frequency listed in Table 8.2.

Justification:

This condition relates to the operator being required to provide a report assessing the data obtained by the high frequency spot sampling of air emissions from new process and requirements for CEMS monitoring in line with Chapter IV Annex VI of the IED.

This requirement was passed to SEPA legal for comment and acceptance.

8.7 Water Polluting Substances – Bovaer

8.7.2 The operator shall provide a report to SEPA within 2 months of the completion of the first 12 months monitoring required by permit condition 8.7.1. The report shall be titled 'Water Polluting Substances -The Assessment of the need for monitoring. The report will summarise all monitoring data provided by permit condition 8.7.1 and provide justification for the need or otherwise to continue monitoring effluent emissions at the frequency listed in Table 8.7.

Justification:

This condition relates to the operator being required to provide a report assessing the data obtained by the monitoring off effluent emissions from new process and requirements for monitoring requirements and frequencies in line with Chapter IV Annex VI of the IED.

This requirement was passed to SEPA legal for comment and acceptance.

Do you propose making changes to existing text, tables or diagrams within the permit?	Yes
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Outline the changes required and provide justification below:

Proposed Condition Number:	Proposed Change:	Justification:
1.1.4.2	Deleted and replaced by new condition referring to existing plant.	Removal of reference to old boilers.
1.1.4.3 / 1.1.4.4	New conditions.	Addition of new stationary technical unit related to the new process.
2.2.5 / 2.2.6	Emergency generator MCP monitoring operation and monitoring requirements.	Update Record Keeping for MCP requirements
3.9.2 / 3.9.3	Noise and Vibration management plan requirements and monitoring requirements	BAT requirements associated with the new process.

Schedule 8	Deleted old schedule and all conditions referring to removed Octabase production process. Schedule renamed for the new production process and all new process permit conditions included within new schedule.	Old process no longer onsite, all former conditions and tables deleted. Renamed for new production process. replaced with new conditions and tables.
Table 2.1	Addition of new reporting requirements associated with permit condition, 2.2.5, 3.9.2, 3.9.3, 8.4.3, 8.4.7, 8.7.2. Deletion of redundant requirements for permit condition 8.2.1.	Permit Reporting Requirements update.
Table 5.1 / 5.2	Removal of old boilers 1 & 2.	Removal of reference to old boilers.
Table 5.3	Removal of old emission point.	Removal of reference to old boilers.
Section 5.6	Deletion of Temporary Boilers section	Removal of reference to old boilers.
Table 8.1	New Emissions to Air ELVs for new production process emission points.	As required.
Table 8.2	New Emissions to Air Monitoring Requirements for new production process emission points.	As required.
Table 8.3	New Emissions to Air Reference Conditions for new production process emission points.	As required.
Table 8.4	New Emissions to Air Mass Emissions monitoring requirements for new production process emission point.	As required.
Table 8.5	Process monitoring requirements for new production process.	As required.
Table 8.6	New Emissions to Air Monitoring Requirements for new production process emission point.	As required.
Table 8.7	Water Polluting Substances Monitoring Requirements fore new production process and existing emission point to water environment.	Chapter IV waste incineration monitoring requirements.
Figure 8.1	New production process description.	New production process description.
Figure 8.2	New production process emissions to air abatement process description.	New production process emissions to air abatement process description.
SITE PLAN	Site plan replaced with new.	Updated site plan to include new process area.
SCHEDULE B	Conditions applying to the monitoring and data handling requirements for waste incineration plant for emissions to air.	Chapter IV waste incineration monitoring requirements.
Officer:	-	

8 Emission Limit Values or Equivalent Technical Parameters/Measures

Are you are dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters?	Yes
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Outline the changes required and provide justification below:

Substance(s): DCM (Dichloromethane), TVOC, Polychlorinated dibenzo-p-dioxins and -furans, NOx, NH3 (Ammonia), Cl (Elemental Chlorine), HCl (Gaseous Chlorides).

Relevant emission benchmarks: *draft UK BAT WGC BREF – BAT-AELs – BAT conclusion 15, 16, 20, 22 (these requirements mirror EU WGC BAT that the operators application refers to).

draft*ELVs:

BAT 15;

- DCM – 1mg/m³
- TVOC – 20mg/m³

BAT 16;

- Dioxins & Furans – 0.05 ng I-TEQ/Nm³

BAT 20;

- NOx – 200mg/m³

BAT 22;

- NH3 – 40mg/m³
- HCl – 10mg/m³
- Cl – 2mg/m³

Emission point: Air emissions from the off gas and liquid treatment unit stack.

Rationale: The site has been designed and modelled to meet the requirements of the Common Waste Gas Management and Treatment Systems in the Chemical Sector including (draft) future UK BAT WGC for the sector. The application supporting documentation confirms that emissions release rates to air from the process at upper BAT-AEL concentrations. The model considers worst case continuous emissions rates and is a conservative assessment. The model conclusions stated that *maximum ground level process contributions will have an insignificant impact on human health; and predicted impacts on designated sensitive habitats are considered insignificant.*

These AELs offer a higher level of environmental protection than the equivalent limits prescribed in Chapter IV of the IED – see section 5.10 for comparisons between the two regimes and additional justification.

Officer: -

9 Peer Review

Has the determination and draft permit been Peer Reviewed?

Yes

Comments made:

Comments and guidance given on all aspects of the variation schedule and decisions documents.

Officer: -

10 Final Determination

Issue of a Permit - Based on the information available at the time

Issue a Permit – Based on the information available at the time of the determination SEPA is satisfied that

- The applicant will be the person who will have control over the operation of the installation/mobile plant,
- The applicant will ensure that the installation/mobile plant is operated so as to comply with the conditions of the Permit,
- The applicant is a fit and proper person (specified waste management activities only),
- Planning permission for the activity is in force (specified waste management activities only),
- That the operator is in a position to use all appropriate preventative measures against pollution, in particular through the application of best available techniques.
- That no significant pollution should be caused.