MERSEN SCOTLAND HOLYTOWN LIMITED
Eurocentral

Permit Variation

PPC/A/1018364

Contents

1 Non-Technical Summary of Determination

Provide a non-technical summary of the process and determination

Mersen plan to expand production by extending both the Site A and Site B facilities and install new production equipment. This will increase the output of several activities, including the production of carbon fibre insulation materials.

In addition to the existing plant, the extended installation will include:

- new carbonisation furnaces;
- new continuous carbonisation furnaces;
- new ultra-high temperature furnaces;
- a new moulding station; and
- a new paintshop and associated drying plant.

Associated emissions control equipment and other ancillary plant will be installed where required.

Compared to present, Mersen will use an additional 45 tonnes of organic solvent per annum upon commissioning of the new Site A paintshop for use in an extended range of product gluing, forming, and assembly activities.

Additionally, there will be a new Dissolved Air Flotation (DAF) effluent treatment plant installed associated with the new Site B moulding station which will have the capacity to treat more than 400 m^3 of effluent per day.

Because of the proposed changes, two additional PPC regulated activities will be operated at the installation, these being:

A Solvent based activity resulting from the adhesive coating process.

The disposal of non-hazardous waste at the installation via the effluent treatment plant.
The existing permit will be varied by adding appropriate conditions to control and monitor the additional processes.

Glossary of Terms

AEL - Associated Emission Level
BAT - Best Available Techniques
BCC - British Ceramic Confederation
BREF – Best Available Techniques Reference Document
BAT-C – Best Available Technique Conclusions
CIRIA – the Construction Industry Research and Information Association
CCA – Climate Change Levy Agreement
CO – Coordinating Officer
DAF – Dissolved Air Flotation
ELV – Emission Limit Value
GAC – Granular Activated Carbon
PGN – Process Guidance Note
TO – Thermal Oxidiser
WTBREF – Best Available Techniques (BAT) Reference Document for Waste Treatment

2 External Consultation and SEPA's response		
Is Public Consultation Required? (if no delete rows below)		**Yes**
Advertisement Check:	**Date**	**Compliance with advertising requirements**
Edinburgh Gazette	**20/12/2024**	**Compliant**
Motherwell Times	**18/12/2024**	**Compliant**
No of responses received	None	
Summary of responses and how they were taken into account during the determination:		
No responses		
Summary of responses withheld from the public register on request and how they were taken into account during the determination:		
No responses		
Is PPC Statutory Consultation Required? (if no delete rows below)		**Yes**
Food Standards Agency:	Consulted 02 December 2024. Response: (27/12/2024) 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:	No response received.	
Local Authority	Consulted 02 December 2024. Response: (09/12/2024) I refer to SEPA'S recent request for comments on changes to permit at the above address and advise that the Planning Service has no comments or objection to the amended control permit.	
Scottish Water	Not consulted.	
NatureScot	Consulted 02 December 2024. Response: (09/01/2025) We do not intend to offer advice or comment on this proposal as we are content that SEPA will identify any impacts upon the natural heritage and address them without further reference to Nature Scot.	
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	
Date draft determination placed on SEPA's Website	
Details of any other 'appropriate means' used to advertise the draft. Seek advice from the communication department	
Date public consultation on draft permit opened	
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: **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.**	

3 Administrative determinations

Determination of the Schedule 1 Activity

The site is currently permitted to carry out the following activities as described in the PPC 2012 Regulations:

Section 1.2 Part A (c) Pyrolysis, carbonisation, distillation, gasification, liquefaction, partial oxidisation or other heat treatment of coal (other than drying of coal), lignite, oil, or other carbonaceous material or mixtures, otherwise than with a view to making charcoal.

Section 1.2 Part A (f) Purifying or refining any of the products of an activity mentioned in paragraph (a) or its conversion into a different product

Section 6.4 Part B (a) (iii) using… 25 tonnes or more of organic solvents in respect of any cold set web offset printing activity or any sheet fed offset litho printing activity or, in respect of any other activity, 5 tonnes or more of organic solvents.

The proposals outlined in this variation will result in the introduction of two new PPC-regulated activities:

Section 6.4 Part B (a)(iv): The use of 5+ tonnes of organic solvents per year for adhesive coating.

Section 5.4 Part A (a) (ii)
Disposal of non-hazardous waste via physico-chemical treatment exceeding 50 tonnes per day.

Determination of the Stationary Technical Unit to be permitted

The description of the stationary technical unit will be revised to include the descriptions of the facilities introduced by this variation:
22 carbonisation furnaces
2 continuous carbonisation furnaces
2 ultra-high temperature furnaces
A new moulding station
A new paintshop and drying plant
Emissions control and ancillary equipment
A new Dissolved Air Flotation (DAF) effluent treatment plant will also be installed.

Determination of Directly Associated Activities

The description of the directly associated activities will be revised to include the descriptions of the additional equipment introduced by this variation:

Determination of Site Boundary

New production buildings will be added to Site A and Site B, with additional land incorporated east of Site B. Appendix A of the document Pollution Prevention & Control Permit Variation: Supporting Information, Revision 1 October 2024 includes figures showing the new layout and proposed installation boundaries.

4 Introduction and Background

4.1 Historical Background to the activity and variation

Mersen Scotland Holytown Limited operates a facility in the Eurocentral industrial estate near Holytown, North Lanarkshire, where it manufactures carbon fibre products. The site is regulated by the Scottish Environment Protection Agency (SEPA) under a Pollution Prevention and Control (PPC) Permit (Ref: PPC/A/1018364) and has held a permit since February 2008.

The Holytown site was previously extended in 2021, which saw the addition of a second production area (Site B) immediately opposite the original production facility (Site A) on Woodside in the Eurocentral industrial estate.

4.2 Description of activity

The site is involved in the production of carbon fibre and the conversion of carbon materials into products, including high-temperature carbon insulation. The two PPC-regulated activities at the site are:

The production of carbon fibre bonded materials through processes like pyrolysis and carbonisation (heat treatment of carbon-based materials like rayon) PPC Part A Section 1.2 (c).

The conversion of natural gas into carbon vapour through processes like purification or refining of natural gas PPC Part A Section 1.2 (f).

4.3 Outline details of the Variation applied for

Mersen plans to expand production at the Holytown site by extending both Site A and Site B facilities and installing new production equipment. The extensions will increase the capacity for manufacturing carbon fibre insulation materials. The new additions will include:

- 22 carbonisation furnaces
- 2 continuous carbonisation furnaces
- 2 ultra-high temperature furnaces
- A new moulding station
- A new paintshop and drying plant
- Emissions control and ancillary equipment

The expansion will lead to an additional 45 tonnes of organic solvent usage per year for product gluing, forming, and assembly activities in the new Site A paintshop.

A new Dissolved Air Flotation (DAF) effluent treatment plant will also be installed at Site B to treat over 400 m³ of effluent per day.

As a result, two new PPC-regulated activities will be introduced:

Section 6.4 Part B (a)(iv): The use of greater than 5 tonnes of organic solvents per year for adhesive coating.

Section 5.4 Part A (a) (ii)
Disposal of non-hazardous waste via physico-chemical treatment exceeding 50 tonnes per day.

The existing PPC-regulated activities at the site will continue with increased capacities.

Additionally, Mersen's Site A effluent treatment plant will be improved. Once refurbished the plant will be included in the PPC permit, but it does not form part of this permit variation.

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

Eurocentral Industrial Estate lies immediately to the East of the site.

The nearest residential properties are located at:
Lambourne Crescent 890m to the North
Parkville Road, 950m to the Southeast

According to SEPA's good practice assessment guidance, UK-designated sites (SSSIs and NNRs) within 2km and European-designated sites within 10km of the installation were considered.

The Clyde Valley Woods SAC, located 8km southwest at its closest point, is included in the air quality impact assessment. The assessment predicts that the air quality impact at this location will be insignificant following the proposed changes to the site.

The nearest SSSI, Hamilton Low Parks, is about 5km southwest and is outside the screening distance.

5 Key Environmental Issues

5.1 Summary of significant environmental impacts

The key environmental impacts will be the emissions to air from the thermal oxidisers used on site and the discharge of Trade effluent to the foul sewer.

The treatment of these emissions and any potential environmental impact is discussed fully in the sections below.

5.2 Emissions to Air

Point Source emission to air:

Three new air emission sources are associated with the increased production capacity. Details of these sources are below and proposed ELVs are provided later in this document. The new emission points are:

Thermal Oxidiser (TO): Installed in the southwest corner of Site A, the new thermal oxidiser has a performance guarantee from its manufacturer. It will abate emissions from 22 carbonisation furnaces, the Site A paintshop, and associated drying plant. This is designated as emission point **A11**.
Emissions from A11 are not directly comparable to the three existing thermal oxidisers on-site.

Two Direct Fired Thermal Oxidisers (DFTOs): Located in the north of Site B, the direct-fired thermal oxidisers also have a performance guarantee for VOC emissions. These will abate emissions from the new continuous carbonisation furnaces (CCF3 and CCF4). Emissions from both DFTOs will be directed to a single stack, designated as emission point **B3**.
These emissions are directly comparable to the three existing thermal oxidisers.
The same ELVs are applied, and compliance with all remaining ELVs is expected since VOCs are the primary pollutant.

The existing PPC permit includes ELVs for the Site B paintshop carbon filter (B2), but this process is no longer in use and will be removed from the permit.

ELVs for the Halogen Purification process (A3) will remain unchanged, as the new extensions will not affect its emissions.

Emission Limit Values (ELVs)
All ELVs are standardised as dry gas at 273.15K, 101.3 kPa, and:

- 11% O_2 for combustion sources (A2, A8, B1, A11, and B3).

- No specified O_2 for non-combustion sources (A5, A6, and A10).

Further emission details and environmental impact assessments are included in the documentation supplied in support of this application.

Currently Emissions from the existing Regenerative Thermal Oxidisers (RTOs) within the installation
are subject to regular emissions monitoring and produce extremely low emissions (10mg/Nm3 NOx compared to the Emission Limit Value of 100mg/Nm^3).

Emission Point A11 Compliance
Mersen estimates to use approximately 50 tonnes of solvent annually in the new Site A paintshop. Emissions will comply with Process Guidance Note (PGN) 6/32(11) Guidance for Adhesive Coating, requiring:

- VOC ≤ 50mg C/Nm^3.
- Fugitive emissions ≤ 20% of organic solvent input.
- NOx < 100mg/Nm^3

As such, Mersen will not use the solvent reduction scheme for the proposed Site A paintshop extension.

The new thermal oxidiser guarantees VOC levels of ≤50mg C/Nm^3, provided proper operation and maintenance. While some solvent output data is pending, Mersen is confident that fugitive emissions will remain within the required limits. Adequate extraction and abatement systems will be in place, with efforts to minimise solvent use and waste generation.

There will be no point source emissions to air associated with the Site B effluent treatment plant, this in accordance with the principles outlined in WTBREF BAT 12.

Fugitive emissions to air:

The new paintshop proposed for the Site A extension will result in additional potential for fugitive emissions to air at that location.

At the proposed Effluent treatment plant effluent will be pumped to the treatment plant via an enclosed system and will therefore not be exposed to ambient conditions. All effluent treatment and storage will also take place within enclosed areas. This is in with the guidance contained in Process Guidance Note 6/32 Section 4 and WTBREF BAT 14.

Odour:

The new paintshop in the Site A extension will scale up existing processes without causing off-site odour impacts. Solvent-using processes will be extracted and treated with thermal oxidation, ensuring effective odour control.
Conditions are included within the existing permit requiring all emissions are free of offensive odours at, and beyond, the site boundary.

There will be no emissions of odour associated with the waste treatment process utilised by the Site B effluent treatment plant, as such the proposals are compliant with WTBREF BAT 10, and Process Guidance Note 6/32 Section 4

5.3 Emissions to Water

Point Source Emissions to Surface Water and Sewer:

There will be no discharge from the proposed extensions to surface waters.

Mersen is in discussions with Scottish Water about adding a discharge point to the public sewer for the new Site B effluent treatment plant. This discharge point is shown in the Site B Drainage Plan, supplied in support of the application, and is expected to flow to a wastewater treatment works (WWTW) for further treatment before discharge to the water environment.

The Site B effluent treatment plant is designed to minimize pollutants in this discharge and is configured as follows.

The treatment plant will include four storage tanks: two for untreated wastewater and two for treated wastewater, each with a capacity of 45 m³.
The plant is designed to handle up to 18 m³/h of effluent, although only 15 m³/h is expected to require treatment.

The Treatment principles are as described in the WTBREF BAT 20:

- **Neutralisation**: Sodium hydroxide adjusts wastewater pH for effective DAF treatment.
- **Coagulation and Flocculation**: Hydrex 3250 (ferric chloride) and TD-289 (polymeric flocculant) improve suspended solids removal.
- **Flotation**: Dissolved air flotation (DAF) effectively removes suspended solids from the moulding station wastewater.

Effluent will either go to a 45 m³ clean water tank or the drain after passing through a granular activated carbon (GAC) filter, depending on the moulding station's water needs. Around 90% of the effluent will be reused in the moulding station, with the remaining 10% going to the drain. If needed, the effluent can be drained from the clean water tank. Flow meters will monitor the effluent drains to prevent flooding during heavy rainfall.

The plant will meet the BAT-AELs for indirect discharge into the public sewer. The treatment plant focuses on removing suspended solids for effluent recycling and is designed to comply with trade effluent discharge limits and BAT-AELs from the WTBREF document. Mersen will operate the plant within the discharge limits set by Scottish Water to avoid environmental harm. No substances listed for control under the WFD are used at the site.

Following analysis of the likely effluent characteristics of the new Site B moulding and based on the low concentrations found in the Site A moulding station effluent, SEPA propose monitoring for the following parameters.

Chromium, Nickel, Zinc, Manganese, and Adsorbable organically bound halogens (AOX)

Monitoring will occur during the effluent treatment plant's commissioning and then at a reduced frequency to demonstrate levels during operation (frequency to be agreed with SEPA):

Other metallic components commonly found in wastewater treatment were not detected during the initial screening exercise for the site and no further monitoring will be carried out for:

Arsenic, Cadmium, Copper, Lead (Pb)

Overflow Protection: Tanks are equipped with level indicators linked to an alarm system and overflow pipes redirect wastewater to secondary containment or drainage based on effluent type.

The secondary containment proposed will provide a total volume of 120 m³—120% of the total storage capacity of 100m³.

During commissioning and initial operations Mersen will conduct extensive process and emissions monitoring to confirm performance. If monitoring reveals the need for improvements, Mersen will work with SEPA to develop and implement an improvement plan promptly.

The processes described above demonstrate compliance with WTBREF BAT 19, and BAT20, and within CIRIA C736.

Point Source Emissions to Groundwater:

There will be no discharge from the proposed extensions or effluent treatment plant to groundwater.

This is compliant with the guidance outlined in WTBREF BAT 19.

Fugitive Emissions to Water:

The Site Condition Report supplied in support of this application includes an assessment of the potential impact of fugitive releases on surface water, land, and groundwater.

The Mersen installation is designed with full enclosures and bunded areas for activities such as effluent treatment, raw material, and waste material storage, ensuring secondary containment is provided to mitigate against leaks or spills.

As a result, the risk of fugitive emissions affecting local surface water is considered negligible.

This is compliant with the guidance outlined in WTBREF BAT 19.

5.4 Noise

The Mersen site operates under a formal EMS that ensures strong environmental performance, including noise and vibration reduction. The site's PPC permit mandates a noise and vibration impact assessment every five years, with the latest assessment provided in support of this application.

Due to the low noise impact at sensitive receptor locations, a noise management plan is not deemed necessary. The most recent assessment confirms that the noise impact of the installation is expected to remain insignificant following the proposed variation.

No noise or vibration nuisance is anticipated at sensitive receptors, so additional control measures are not required at this time.
This approach is consistent with the principles outlined in WTBREF BAT1, BAT 17, and BAT 18.

5.5 Resource Utilisation

Water use

Most water use at the new Site A and Site B extensions will come from closed-loop, recirculating systems or recycled water from Site B's effluent treatment plant, leading to minimal mains water usage.

Recycled Water:
The Site B moulding station will use treated water from the effluent treatment plant, including some recycled from the plant's clean water tank.

Mains Water:
The cooling systems for the carbonisation furnaces will use minimal mains water due to their recirculating design with external heat exchangers. Minor mains water usage will go toward the hot water boiler and domestic facilities (like lavatories and safety showers), with effluent discharged to the public sewer.

Water Usage and Discharge:
Total mains water usage is estimated at 16,824 m³ per year, with 1,314 m³ allocated to the new extensions. The Site B effluent treatment plant will discharge around 13,140 m³ of effluent per year (max flow rate: 5.4 m³/h) to the sewer.

An updated water balance will be prepared after the plant's commissioning and stable operation and shared with SEPA.

The recycling practices on-site align with Sustainable Consumption and Production (SCP) standards, as outlined in Process Guidance Note 6/32 and within WTBREF BAT 19.

Energy use and generation

Mersen's Holytown facility is part of a Climate Change Levy Agreement (CCA) through the British Ceramic Confederation (BCC), with discussions ongoing to update the agreement to account for increased production capacity and energy usage.

The carbon fibre manufacturing process is energy intensive. To improve energy efficiency, the facility's new extensions include:

- Intelligent automated control systems
- Insulation of carbon fibre furnaces
- Heat recovery systems
- Waste minimization through quality control procedures
-

The Site A extension includes a thermal oxidiser with heat recovery, and Site B features direct-fired thermal oxidisers with air-to-thermal-oil heat recovery, which will recover 1656 kW for carbonisation.
Energy sources are primarily electricity from the National Grid and natural gas. Key users of energy include carbonisation furnaces, nitrogen generation, cooling systems, and thermal oxidisers.

Estimated annual carbon dioxide emissions from the extensions are 10,160 tonnes, with 6,650 tonnes from electricity and 3,510 tonnes from natural gas.

Post-commissioning, energy consumption will be monitored using sub-metering to refine energy efficiency and product-specific consumption. An energy efficiency plan is in place but currently inactive due to operational issues, with plans to implement sitewide monitoring soon.

The principles of energy use employed on the site demonstrate compliance with Sustainable consumption and production (SCP) as described in Process Guidance Note 6/32 and within WTBREF BAT 23

Raw Materials Selection and Use

Mersen follows strict quality, health, safety, and environmental standards in sourcing raw materials from reputable suppliers. The proposed extensions will use familiar materials, except for chemicals for the new Site B effluent treatment plant, which minimizes hazardous material use by opting for safer alternatives. However, some hazardous materials may still be necessary to ensure effective waste treatment and regulatory compliance.

Measures are in place to minimize risks associated with hazardous materials, including control and containment, especially for materials containing VOCs. Furfuryl alcohol, used in the new Site A paintshop, is classified as hazardous but not halogenated, so no replacement or limitation is required.

Efficient raw material use is central to Mersen's operations, with automated systems and regular analysis ensuring minimal losses. Rejected carbon pieces are reused in the production process. The DAF effluent treatment plant recycles treated water for reuse in the moulding station and produces effluent suitable for discharge into the sewer.
Mersen tracks solvent usage through an electronic database and will extend this system to the new Site A paintshop. Solvent consumption will be reported annually to SEPA detailing solvent inputs, outputs, and emissions.

The Site A paintshop is expected to use 50 tonnes of organic solvent annually. Mersen aims to meet the 20% fugitive emissions limit through efficient systems and staff training. Ongoing emissions monitoring will be required after commissioning to ensure compliance with regulatory limits.

The systems described above and information supplied in support of the application demonstrate compliance with Process Guidance Note 6/32 Sections 4 and 5, and within WTBREF BAT 22

5.6 Waste Management and Handling

Waste Minimisation

Existing permit conditions require Mersen to record the annual consumption of raw materials, water, energy, and the annual generation of residues and wastewater respectively. Mersen will continue to track annual consumptions and waste generation for the existing plant and will expand their procedures to encompass the new effluent treatment plant.

These records are reported to SEPA to demonstrate ongoing improvement within the facility and are representative of WTBREF BAT 11

Waste Handling

Mersen is installing a new effluent treatment plant at Site B as part of an extension project to treat process effluent from the moulding station, with a capacity of up to 18m³ per hour. The plant will be regulated under the PPC permit for treating non-hazardous waste exceeding 50 tonnes per day.
Key features of the plant include:

- **Environmental Management System (EMS)**: Mersen's ISO 14001:2015 EMS will extend to the new plant.
- **Waste Pre-acceptance & Acceptance**: Only suitable wastewater will enter the plant, and it will not receive waste from other sources.
- **Waste Tracking**: The flow of wastewater will be monitored to ensure proper treatment and storage.

- **Waste Storage**: The plant will use four 45m³ tanks for effluent storage and will treat and store effluent within enclosed areas to prevent exposure to ambient conditions.
- **Discharge Quality**: Treated effluent will be monitored and either reused or discharged based on quality.
- **Emissions Management**: Emissions to air, water, and soil will be minimal, with treatment methods including dissolved air flotation (DAF) and possible neutralization.
- **Accident Management**: An accident plan will be in place for leaks, spills, and emergencies, with safety measures like bunded storage and leak detection systems.

Additionally, Mersen's waste management includes:

- **Waste Segregation**: Designated areas at Site A and Site B follow BAT standards, with a focus on reuse, recycling, and recovery.
- **Waste Storage**: Clearly defined, secure storage areas on hardstanding will ensure proper waste management with regular inspections to maintain compliance.

The plant will operate to improve energy and material efficiency while ensuring compliance with environmental standards.

The principles described above and demonstrated within the documentation supplied in support of the application demonstrates compliance with WTBREF BAT 1, BAT 2, BAT 3, BAT 4, BAT 6, BAT7, and BAT 11.

Waste Recovery or Disposal

As described above Mersen's waste segregation and storage procedures have been designed to maximise the potential for reuse, recycling and recovery of materials wherever possible.

Where materials are sent off site Mersen retains waste transfer notes on-site and uses approved contractors for off-site waste recycling, reuse, or disposal. Records include the nature, origin, and volume of waste. Contractor certifications and Waste Management Licences are verified and recorded, ensuring compliance with Duty of Care regulations.

A breakdown of predicted waste quantities from the activities undertaken at the Site A and Site B has been provided in support of the application. The estimated data relates solely to the proposed extensions to the installation.

The policies and information provided in support of the application demonstrate compliance with WTBREF BAT 11.

5.7 Management of the site

Environmental Management System

There are two distinct areas of operation at the Holytown site. Sites A and B, though not physically connected, operate as a single entity under shared management systems and personnel. The proposed extensions for each site will integrate with their respective locations while continuing to use the same management systems, which are being updated to include the new extensions and operations.

The manufacturing activities at Mersen operate under an integrated management system addressing environmental impact, product quality, and occupational health and safety. This system is audited annually and certified to the following standards:

- ISO 14001:2015 for environmental management.
- ISO 9001:2015 for quality management.
- ISO 45001:2018 for occupational health and safety management.

The site's management system incorporates operational and maintenance procedures to minimize environmental impact, ensure product quality, and support sustainable operations.

Mersen's environmental management system (EMS) includes:
A clear environmental policy and programme.
Commitments to continuous improvement, pollution prevention, and compliance with legal and other obligations.
Environmental objectives and key performance indicators, reviewed regularly to drive improvement.

This is compliant with the requirements of WTBREF BAT1.

Accidents and their Consequences

The proposals contained within the application aims to double production output and introduce two new PPC-regulated activities, all under existing management controls and updated risk minimization practices.
Mersen's integrated management systems, certified to ISO standards, ensure effective risk management and compliance. Key practices include hazard identification, risk assessment, and HAZOP studies to assess and control environmental risks.

Operational measures to minimize risks include accident recording, health and safety protocols, annual emergency response training, and routine safety inspections. Materials are assessed under COSHH, and staff receive role-specific training on incident response. Safe equipment operation, a Permit-to-Work system, and incident management processes are in place. Site security ensures protection from theft or vandalism. This approach supports safe, sustainable operations in compliance with regulatory standards.

This comprehensive approach ensures safe, sustainable operations while addressing the risks associated with the proposed site changes and complies with WTBREF BAT1.

Closure

The existing permit contains conditions requiring the operator to prepare and maintain a 'De-commissioning Plan', Condition 2.9.

The proposed extension has been designed to meet the needs of the carbon fibre manufacturing process while minimizing environmental impact during site closure and decommissioning.

Mersen's site closure plan, aligned with SEPA guidance, is a live document and will be updated to reflect installation changes. It includes:

- Site plans showing underground infrastructure (e.g., pipework, utilities, drainage).
- Details of building construction methods and materials.
- A register of hazardous materials, their locations, and conditions.
- The Site Condition Report (SCR) and Baseline Report.
- Records of construction activities, spillages, and their potential impact on site quality.
- Technical details of all current and historical process chemicals.
- Environmental risk assessments for operations and decommissioning.

- Details of demolition techniques or machinery required due to historical site construction.

5.8 Site Condition report

SEPA believes that a full Site Investigation is necessary to create a Statement of Site Condition and Baseline Report. This is based on the following points:

- There is no current data on the condition of the soils and groundwater beneath the Installation Areas.
- The Installation Areas handle substances that could pose a risk to the environment and property.
- Potential scenarios where contaminants could be released into the environment have been identified.

Therefore, it is recommended that an intrusive investigation be carried out, considering the potential Relevant Hazardous Substances identified in the report submitted in support of this application.

Conditions have been included within this variation requiring that the operator update the current Site Condition Report and include a baseline report for the site. The revised Site Condition and Baseline report will be prepared in accordance with SEPA's PPC Technical Guidance Note 2 (IED-TG-02).

Where site investigations are required for the preparation of the Baseline report under the site investigation, proposals must be submitted to SEPA prior to any site investigations being undertaken to ensure their suitability.

The revised site condition and baseline report should be submitted to SEPA within twelve months of the issue of this variation.

The Site Decommissioning Plan, identified in section 5.8 above, will require revision to refer to the revised site condition/baseline report. This will be reviewed as part of routine regulatory effort at the site.

5.9 Monitoring

Air

Monitoring of the sites emissions to air will be extended to cover the new point source emissions points. Monitoring will be in accordance with the guidance provided in Process Guidance Note 6/32 for the following parameters:
NOx (as nitrogen dioxide, NO_2), Carbon monoxide (CO), Sulphur dioxide (SO_2), Particulate Matter,
Benzene (C_6H_6), Total Volatile Organic Compounds (VOCs) as carbon.

Details of the ELVs and monitoring frequencies are described in detail in Section 9 below.

Water

The discharge from the effluent treatment plant is to the foul sewer and is considered as an indirect discharge to the water environment. The effluent will be monitored in accordance with the requirements of the Waste Treatment BREF and in particular for the following parameters:
Flow rate, Suspended Solids, Phenol index, Chemical oxygen demand, Adsorbable organically bound halogens, Manganese, Chromium, Nickel, Zinc.

Details of the ELVs and monitoring frequencies are described in detail in Section 9 below.

Soil and Groundwater

The soil and groundwater monitoring requirements from the existing permit conditions will extend to cover the new areas of the site.

Waste

The site's Environmental Management System (EMS) includes a monitoring program for waste, which tracks the quantity, nature, origin, frequency of collection, and transport method for various waste streams. Duty of Care documentation ensures proper waste management, recording details like the physical and chemical characteristics of the waste, its hazard characteristics, handling precautions, and substances with which it cannot be mixed.

The existing permit contains conditions under resource utilisation and waste management, Conditions 2.5 and 2.6 which requires the operator to report waste data at least every 2 years along with any potential efficiency measures which would minimise waste produced by the site. These reports will extend to the new operations on site and be reviewed biannually as part of ongoing regulatory effort.
This is in line with the requirements of Sustainable consumption and production (SCP) as described in Process Guidance Note 6/32 and within WTBREF BAT 11.

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

Where BAT has been considered in assessment of the previous sections a reference to the relevant BAT condition has been included at that point.

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? If yes, provide information on the action and justification below:	**No**
Screening distance(s) used	10km
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). If yes, provide information on the legislation, action and justification below:	**No**

7 Environmental Impact Assessment and COMAH

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?

Articles 5, 6 and 7 of Council Directive 85/337/EEC are not relevant to this application.

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?
The CoMAH regulations are not relevant to this application.

8 Details of the permit	
Do you propose placing any non standard conditions in the Permit?	**No**
Do you propose making changes to existing text, tables or diagrams within the permit?	**Yes**
Outline the changes required and provide justification below:	

Proposed Condition Number:	Proposed Change:	Justification:
Interpretation of terms	Additional items have been added relevant to the Section	The additional terms are required to provide descriptions of terminology relevant to the Solvent Emissions Activity added in this variation.
1.1.3	Two new activities have been added to the permitted activities on site, a solvent emissions activity and a waste treatment activity as described in this document	The new activities describe the changes in level of activity on the site as the processes are now above the threshold where a PPC permit is required
1.1.4	The description of the Stationary Technical Unit has been updated	The updated description includes the new equipment added to the site by this variation
1.1.5	The description of the Directly Associated Activities has been updated	The updated description includes new equipment added to the site by this variation
1.2	The site Plans and process diagrams have been updated	The new diagrams clearly illustrate the site boundaries, the layout of the site, the emission points to air and sewer, and schematics of the on-site processes.
Table 2.1	Table 2.1 has been updated to remove one item which has been superseded and to include additional reporting requirements	The deleted row refers to previous conditions relating to soil and groundwater conditions which have been updated in this permit The additional reports include reference to the reports required by the inclusion of soil and groundwater monitoring at the site and additional

		reporting requirements necessary to satisfy the requirements of the solvent emissions activity added by this variation
2.7	The condition has been deleted	In the previous permit Condition 2.7 contained some measures relating to the protection of soil and groundwater. These have been moved and are incorporated within the comprehensive Soil and Groundwater monitoring conditions contained at Condition 3.4 of the permit and as described below.
3.4	Soil and Groundwater monitoring conditions have been added to the permit	The new conditions include reference to the information required by the operator to demonstrate compliance with the Industrial Emissions Directive (IED) and PPC 2012 (Reg 23, 2 (f) in relation to the protection of soil and groundwater from relevant hazardous substances (RHS). These requirements are triggered by this variation at substantial change level (operator led)
4.3.2	The condition has been updated to describe the abatement equipment required in Area A and Area B of the facility.	The updated condition clearly describes the abatement treatment path and emission point for each of the on-site processes in Area A and Area B after the inclusion of the additional equipment in this variation.
4.7, and 4.8.	Conditions 4.7. and 4.8 have been added to the permit.	Condition 4.7 details the records that the operator needs to maintain in respect of the solvent emissions activity and how to calculate and report the figures related to solvent consumption on site. Condition 4.8 details requirements should the operator use any 'Risk Phrase' solvents in the activity. The condition includes the 'R'

		phrases to which the requirements reply, and the information required to be reported to SEPA.
4.9	Conditions have been added to cover the operation of the effluent treatment plant included as part of this variation	Basic conditions have been added to the Permit to ensure effective operation, maintenance, and monitoring of the operation of the effluent treatment plant.
Table 4.1 Emissions to Air ELVs	The table has been updated to include additional emission points to air	New emission points have been included within the table relevant to the additional activities added by this variation. Where appropriate, ELVs have been included based on the appropriate BREF guidance or PG Note. The derivation of any ELVs is described in more detail in Section 9 of this document.
Table 4.2 Emissions to Air Monitoring Requirements	The table has been updated to include additional emission points to air and review test methodology where appropriate.	The new emission points have been added to the descriptions within the table and the test methods have been reviewed to ensure consistency with standards. Reference conditions for the correction of monitoring results are contained within the permit at condition 4.1.3.
Table 4.3 Mass Emissions to Air	The table has been updated to include additional emission points for Mass Emission reporting	The new emission points have been added to the descriptions within the table to ensure appropriate reporting of mass emissions from the site.
Table 4.4 Emissions to Sewer ELVs	The table has been updated to include additional emission points to the foul sewer	New emission points have been included within the table relevant to the additional activities added by this variation. Where appropriate, ELVs have been included based on the appropriate BREF guidance. The derivation of any ELVs is described in more detail in Section 9 of this document.
Table 4.5 Emissions to Sewer	The table has been updated to include additional emission points to the foul sewer and review test methodology where appropriate.	The new emission points have been added to the descriptions within the table and the test methods have been reviewed

Monitoring Requirements		to ensure consistency with standards.
Table 4.6 Mass Emissions to Sewer	The table has been updated to include additional emission points for Mass Emission reporting	The new emission points have been added to the descriptions within the table to ensure appropriate reporting of mass emissions from the site.
Explanatory Notes Section 5	The explanatory notes have been updated	This change updates the address, phone No, and email contact details for the reporting of information in relation to this permit

9 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**

Outline the changes required and provide justification below:

New ELVs are included within the permit for the additional processes introduced by this variation.

Emissions to Air ELVs:
New Emission Points A11 and B3

Parameter	Emission Limit Value (mg/m^3)	Justification
Particulates	5	The ELVs for Particulates is taken directly from the Non-Ferrous Metals BAT document which includes details on carbon and/or graphite production and the treatment of the emissions to air from the baking process when treated using a regenerative thermal oxidiser. These are comparable to the emissions from the emissions produced by the processes operated by Mersen. The limit for Particulates is detailed in BAT Table 180. The limit for TVOC is taken directly from the Statutory guidance for adhesive coating PG 6/32 Table 4.1 which is representative of to the onsite activities. The emission levels included for Particulates and VOC at the new emission points is consistent with that of the existing emission points within the permit.
VOC as total C	50	
CO	100	The ELVs for CO and NOx are taken directly from the Statutory guidance for adhesive coating PG 6/32 Table 4.1 which are applicable to the onsite activities. The emission levels included for CO and NOx at the new emission points is consistent with that of the existing emission points within the permit.
NOx	100	

Benzene	2	Benzene emissions occur from the exhaust stack of the carbon fabric dryer, which is used in carbonization of the heat-treated fibres. From the modelled data for Benzene: At most locations (receptors), the predicted benzene levels are less than 1% of the legal limit. However, at the worst-case locations (grid points), the levels are slightly above 1% of the limit. Benzene PECs (Predicted Environmental Concentrations) at all locations (receptors and grid points) the predicted concentrations of benzene are below the legal limit of 3.25 µg/m³. As such the predicted benzene levels at sensitive human receptors (like residential areas) are very low and do not represent significant pollution. In essence, the levels of benzene are safe, comply with regulations, and won't cause significant pollution. In this instance the existing ELV for Benzene has been retained to maintain consistency with the other contributing sources on site.
HCN	1	The manufacturing process of carbon fibre frequently results in the generation of substantial amounts of Hydrogen cyanide (HCN) Cyanides are produced during the decomposition of acrylonitrile (in PAN cloth) used in the production of carbon fibres. HCN concentrations of 55 mg/Nm^3 have been reported during periods when abatement has not been available. Afterburners are used to decompose hydrogen cyanide with emissions of less than 2–5 mg/Nm^3 achieved. NFM BAT 10.2.1.6. The emission level included for HCN at the new emission points is consistent with that of the existing emission points within the permit.
SOx	50	The solvents used in the new paintshop will have low sulphur content, and the thermal oxidiser, which runs on natural gas, will produce very little sulphur dioxide emissions. o additional control measures for sulphur dioxide are needed. In this instance the existing ELV for SOx has been retained to maintain consistency with the other contributing sources on site.

Emissions to Sewer ELVs

Parameter	Emission Limit Value	Justification
Suspended Solids (mg/l)	1000	No limit is defined for an indirect discharge to the water environment. Suspended Solids has been retained as an analytical parameter as it provides a direct indication of the operational efficiency of the treatment plant. The proposed limit is as indicated in the operators Trade effluent agreement with Scottish Water. The monitoring frequency has been set at once per day or per discharge to demonstrate regulatory compliance, to reflect the operational characteristics, and to maintain a sufficient data set to demonstrate the operational efficiency of the plant.
Phenol index	5	No limit is defined for an indirect discharge to the water environment and the limit is based on the existing permitted value.

		Phenol Index has been retained as an analytical parameter as phenols has been identified as relevant in the waste water inventory for the plant. The monitoring frequency has been set at once per month to demonstrate regulatory compliance, to reflect the operational characteristics, and to maintain a sufficient data set to demonstrate the operational efficiency of the plant.
Chemical oxygen demand (COD) (mg/l)	2000	No limit is defined for an indirect discharge to the water environment and the limit is based on the existing permitted value. Chemical oxygen demand has been retained as an analytical parameter as it has been identified as relevant in the waste water inventory and provides a direct indication of the operational efficiency of the treatment plant. The monitoring frequency has been set at once per day or per discharge to demonstrate regulatory compliance, to reflect the operational characteristics, and to maintain a sufficient data set to demonstrate the operational efficiency of the plant.
Total organic carbon (TOC) (mg/l)	-	No limit is defined for an indirect discharge to the water environment. TOC is included as an indicative parameter for comparison with COD results for the site.
Adsorbable organically bound halogens (AOX) (mg/l)	1	Limit taken from BAT Table 6.2, Treatment of water-based liquid Waste and as an indirect discharge to water. As per Table 6.2 guidance note (4) the monitoring frequency has been reduced as the downstream wastewater treatment plant abates the pollutants concerned. The monitoring frequency has been set at once per month to reflect the operational characteristics of the plant and to maintain a sufficient data set to demonstrate the operational efficiency of the plant.
Manganese (Mn) (mg/l)	-	Monitoring is required as the substance concerned is identified in the waste water inventory supplied in support of the application. No limit has been set, and the monitoring is required for information only.
Chromium (Cr) (mg/l)	0.3	Limit taken from BAT Table 6.2, Treatment of water-based liquid Waste and as an indirect discharge to water. As per Table 6.2 guidance note (4) the monitoring frequency has been reduced as the downstream wastewater treatment plant abates the pollutants concerned. The monitoring frequency has been set at once per month to reflect the operational characteristics of the plant and to maintain a sufficient data set to demonstrate the operational efficiency of the plant.
Nickel (Ni) (mg/l)	1.0	Limit taken from BAT Table 6.2, Treatment of water-based liquid Waste and as an indirect discharge to water. As per Table 6.2 guidance note (4) the monitoring frequency has been reduced as the downstream wastewater treatment plant abates the pollutants concerned. The monitoring frequency has been set at once per month to reflect the operational characteristics of the plant and to maintain a

		sufficient data set to demonstrate the operational efficiency of the plant.
Zinc (Zn) (mg/l)	2.0	Limit taken from BAT Table 6.2, Treatment of water-based liquid Waste and as an indirect discharge to water. As per Table 6.2 guidance note (4) the monitoring frequency has been reduced as the downstream wastewater treatment plant abates the pollutants concerned. The monitoring frequency has been set at once per month to reflect the operational characteristics of the plant and to maintain a sufficient data set to demonstrate the operational efficiency of the plant.

10 Peer Review

Has the determination and draft permit been Peer Reviewed?	**Yes**
Comments made:	
Minor typographical changes	

11 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.