Bath & North East Somerset Council

Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England and Wales) Regulations 2016 (as amended)

Decision document recording our decision-making process following review of a Permit

The Permit number is: EP126/4

The Operator is: Glenavon Timber Services Ltd

The Installation is: Glenavon Timber Services Ltd

This Variation Notice number is: V2/EP126-4/2024

What this document is about

The Environmental Permitting Regulations (2016) (EPR) require the regulator to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards. We are required to ensure this is completed within four years of the publication of updated decisions on BAT Conclusions. We will use BAT Conclusions published by the European Commission for conclusions published before the UK left the EU, or UK BAT Conclusions published after the UK left the EU. The Environmental Permitting Regulations (2016) enable the objectives of the Industrial Emissions Directive (IED) to be met.

We have reviewed the permit for this installation against the revised BAT Conclusions for surface treatment using organic solvents (STS) including preservation of wood and wood products with chemicals industry sector (WPC) published on 9th December 2020. In this decision document, we set out the reasoning for the consolidated variation notice and permit that we have issued.

It explains how we have reviewed and considered the techniques used by the operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to European Commission establishing best available techniques (BAT) Conclusions ('BAT Conclusions') Commission Implementing Decision (EU) 2020/2009, notified under document C(2020) 4050, establishing Best Available Techniques (BAT) Conclusions (BATc) for surface treatment using organic solvents (STS) including preservation of wood and wood products with chemicals (WPC) industry sector. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as considering the review of the operating techniques used by the operator for the operation of the plant and activities of the installation, the consolidated variation notice and permit takes into account and brings together in a single document all previous variations that relate to the original permit issued.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

How this document is structured

Glossary of acronyms used in this document

BAT	Best Available Technique(s)
BAT-AEL	BAT-Associated Emission Level
BATc	BAT Conclusion
BPR	Biocidal Products Regulation
CO	Carbon monoxide
EMAS	European Union eco-management and audit scheme
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No.1154)
EU	European Union
HOI	Hydrocarbon oil index
IC	Improvement condition
IED	Industrial Emissions Directive (2010/75/EU)
NOx	Oxides of nitrogen (NO plus NO_2 expressed as NO_2)
PAH	Polyaromatic hydrocarbon
STS	Surface treatment using organic solvents
WPC	Preservation of wood and wood products with chemicals

1 Our decision

We have decided to issue the consolidated variation notice and permit to the operator. This will allow them to continue to operate the installation, subject to the conditions in the consolidated variation notice and permit that updates the whole permit.

We consider that, in reaching our decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure a high level of protection is provided for the environment and human health.

2 How we reached our decision

2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We contacted the operator in writing on 04/03/2022 requiring them to provide information to demonstrate where the operation of their installation already met, or how it would subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The operator was advised that where the revised standards were not being met, they should provide information that:

• Describes the techniques that will be implemented before 09/12/2024, which will then ensure that operations meet the revised standard, or
• Justifies why standards will not be met by 09/12/2024, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or
• Justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

Where the operator proposed that they were not intending to meet a BAT standard that also included a BAT-Associated Emission Level (BAT-AEL) described in the BAT Conclusions document, the operator was required to make a formal request for a derogation from compliance with that AEL. In this circumstance, it was required that any such request for a derogation must be supported and justified by sufficient technical and commercial information that would enable the regulator to determine the acceptability of the derogation request.

The initial BAT review response from the operator was received on 06/06/2022. We considered that the review was insufficient for us to complete our determination of the permit review and requested further information which was received on 27/03/2024. The responses are included in the decision checklist regarding the BAT Conclusions in Annex 1 of this document.

The operator made no claim for commercial confidentiality. We have not received any information in relation to the operator’s review which appears to be confidential in relation to any party.

2.2 Review of our own information in respect to the capability of the installation to meet revised standards included in the BAT Conclusions document

Based on our records and previous experience in the regulation of the installation, we consider that the operator will be able to comply with the techniques and standards described in the BAT Conclusions, other than for those techniques and requirements described in BAT Conclusion 1. In relation to this BAT Conclusion, we do not fully agree with the operator in respect to their current stated capability as recorded in their BAT review response. We have therefore included Improvement Condition (IC) 2.4.1 in the consolidated variation notice and permit to ensure that the requirements of the BAT Conclusion are delivered before 09/12/2024.

3 The legal framework

The consolidated variation notice and permit will be issued under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

• an *installation* as described by the IED;
• subject to aspects of other relevant legislation which also have to be addressed.

We consider that in issuing the consolidated variation notice and permit, it will ensure that the operation of the installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

Annex 1: Decision checklist regarding relevant BAT Conclusions

BAT Conclusions for surface treatment using organic solvents including preservation of wood and wood products with chemicals were published on 9th December 2020. There are 29 STS BAT Conclusions and 25 WPC BAT Conclusions.

This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the consolidated variation notice and permit.

The conditions in the permit through which the relevant BAT Conclusions are implemented include but are not limited to the following:

BAT Conclusion requirement/topic	Permit condition(s)	Permit table(s)
BAT 1 & 30 - Environmental Management System	1.1.1	S1.2
BAT 31-34(d-f) - Use of raw materials	1.3.1	S1.2 and S2.1
BAT 35 & 39 - Energy efficiency	1.2.1	S4.3
BAT 36-38 – Preservative application process	2.3.1	S1.2
BAT 41 & 42 - Avoidance, recovery and disposal of wastes produced by the activities	1.4.1, 2.3.3 and 2.3.4	S1.2
BAT 40, 44, 46 & 47 – Emissions monitoring	2.3.2 and 3.3	S3.1, S3.2 & S4.1
BAT 53 - Noise	3.5.1 and 3.5.2	S1.2
Other operating techniques	3.4.1	S1.2

The overall status of compliance with each BAT Conclusion is indicated in the following table as:

NA Not Applicable
CC Currently Compliant
FC Compliant in the future (within 4 years of publication of the BAT Conclusions)
NC Not Compliant

Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	**Status** **NA** **CC** **FC** **NC**	**Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement**
BAT Conclusions that are not applicable to this installation.	**NA**	This installation undertakes wood preservation without the use of solvent-based chemicals or creosote therefore BAT Conclusions 30 (ii), 33 (c), 34 (a-c), 45, 48, 49, 50, 51 and 52 are not applicable. BAT Conclusion 43
BAT Conclusions where we accept the operator's BAT Review response that they are currently compliant and no further explanation is required.	**CC**	BAT Conclusions 30 (i, iii-v), 31, 32, 33 (a, b & d), 34 (d-f), 35, 36, 37, 38, 39, 40, 41, 42, 44, 46, 47 and 53
BAT Conclusions where improvements will be undertaken on site within the 4 year period in order to achieve compliance with the narrative and/or BAT-AEL prior to the 4 year deadline.	**FC**	BAT Conclusion 1 – review of Environmental Management System

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
BAT 1	**In order to improve the overall environmental performance, BAT is to implement and adhere to an Environmental Management System (EMS) that incorporates all of the following features:** i) commitment, leadership and accountability of the management, including senior management, for the implementation of an effective EMS; ii) an analysis that includes the determination of the organisation's context, the identification of the needs and expectations of interested parties, the identification of characteristics of the installation that are associated with possible risks for the environment (or human health) as well as of the applicable legal requirements relating to the environment; iii) development of an environmental policy that includes the continuous improvement of the environmental performance of the installation; iv) establishing objectives and performance indicators in relation to significant environmental aspects, including safeguarding compliance with applicable legal requirements; v) planning and implementing the necessary procedures and actions (including corrective and preventive actions where needed), to achieve the environmental objectives and avoid environmental risks; vi) determination of structures, roles and responsibilities in relation to environmental aspects and objectives, and provision of the financial and human resources needed; vii) ensuring the necessary competence and awareness of staff whose work may affect the environmental performance of the installation (e.g. by providing information and training); viii) internal and external communication; ix) fostering employee involvement in good environmental management practices;	**FC**	The EMS review has identified the need for an improved EMS to be implemented and adhered to, incorporating details of the current EMS plus additional information relating to BAT 1(vi, vii, viii, ix, xiv, xv, xvi, xvii, xviii and ix). Condition 2.4.1 of the consolidated permit references Table S1.3 (Improvement programme requirements) of the permit, each set in order to secure and track progress towards achieving compliance. Environmental consultants have been commissioned to undertake a full site and process review and to establish a revised EMS which incorporates all of the features of BAT Conclusion 1 by the required deadline of 9th December 2024.

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	x) establishing and maintaining a management manual and written procedures to control activities with significant environmental impact as well as relevant records; xi) effective operational planning and process control; xii) implementation of appropriate maintenance programmes; xiii) emergency preparedness and response protocols, including the prevention and/or mitigation of the adverse (environmental) impacts of emergency situations; xiv) when (re)designing a (new) installation or a part thereof, consideration of its environmental impacts throughout its life, which includes construction, maintenance, operation and decommissioning; xv) implementation of a monitoring and measurement programme, if necessary; information can be found in the Reference Report on Monitoring of Emissions to Air and Water from IED Installations; xvi) application of sectoral benchmarking on a regular basis; xvii) periodic independent (as far as practicable) internal auditing and periodic independent external auditing in order to assess the environmental performance and to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained; xviii) evaluation of causes of nonconformities, implementation of corrective actions in response to nonconformities, review of the effectiveness of corrective actions, and determination of whether similar nonconformities exist or could potentially occur; xix) periodic review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness; xx) following and taking into account the development of cleaner techniques.		
BAT 30	**In order to improve the overall environmental performance, BAT is to elaborate and implement an Environmental Management System (EMS) that incorporates all of the**	**CC**	BAT 30 (ii) is not applicable – no solvent-based chemicals or creosote used on site

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	features (i) to (xx) of BAT 1 as well as the following specific features: (i) Keeping up to date with the developments in biocidal products and in associated legislation (e.g. authorisation of products under the BPR) with a view to using the most environmentally friendly processes. (ii) Inclusion of a solvent mass balance for solvent-based and creosote treatment (see BAT 33 (c)). (iii) Identification and listing of all environmentally critical process and abatement equipment (whose failure could have an impact on the environment) (see BAT 46 (c)). The list of critical equipment is kept up to date. (iv) Inclusion of plans for the prevention and control of leaks and spillages, including waste management guidelines for dealing with waste arising from spillage control (see BAT 46). (v) Recording of accidental leakages and spillages, and improvement plans (countermeasures). *Note:* Regulation (EC) No 1221/2009 establishes the European Union eco-management and audit scheme (EMAS), which is an example of an EMS consistent with this BAT.		
BAT 31	**In order to prevent or reduce emissions of PAHs and/or solvents, BAT is to use water-based preservatives.** *Description:* Solvent-based preservatives or creosote are replaced by water-based preservatives. Water acts as the carrier for the biocides. *Applicability:* The applicability may be restricted due to product quality requirements or specifications.	**CC**	

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
BAT 32	**In order to reduce the environmental risk posed by the use of treatment chemicals, BAT is to substitute treatment chemicals currently in use with less hazardous ones based on a regular (e.g. once every year) check aiming at identifying potentially new available and safer alternatives.** *Applicability:* Substitution may be restricted due to product quality requirements or specifications.	**CC**	
BAT 33	**In order to increase resource efficiency and to reduce the environmental impact and risk associated with the use of treatment chemicals, BAT is to reduce their consumption by using all of the techniques given below.** (a) Use of an efficient preservative application system: Application systems where the wood is immersed in the preservative solution are more efficient than, for example, spraying. The application efficiency of vacuum processes (closed system) is close to 100%. The selection of the application system takes into account the use class and the penetration level needed. Only applicable to new plants or major plant upgrades. (b) Control and optimisation of the consumption of the treatment chemicals for the specific end use: Control and optimisation of the consumption of the treatment chemicals by: (a) weighing the wood/wood products before and after impregnation; or (b) determining the amount of preservative solution during and after impregnation. The consumption of the treatment chemicals follows suppliers' recommendations and does not lead to	**CC**	BAT 33 (c) is not applicable – no solvent-based chemicals or creosote used on site

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	exceedances of the retention requirements (e.g. set in product quality standards). Generally applicable. (c) Solvent mass balance: The compilation, at least once every year, of organic solvent inputs and outputs of a plant as defined in Part 7(2) of Annex VII to Directive 2010/75/EU. Only applicable to plants using solvent-based treatment chemicals or creosote. (d) Measurement and adjustment of wood moisture before treatment: Wood moisture is measured prior to treatment (e.g. by measuring the electric resistance or by weighing) and adjusted if needed (e.g. by further seasoning of the wood) in order to optimise the impregnation process and ensure the required product quality. Only applicable if wood with a specific moisture content is needed.		
BAT 34	**In order to reduce emissions from delivery, storage and handling of treatment chemicals, BAT is to use technique (a) or (b) and all of the techniques (c) to (f) given below.** (a) Back-venting: Also referred to as vapour balancing. Vapours of solvents or creosote which are displaced from the receiving tank during filling are collected and returned to the tank or truck from which the liquid is delivered. (b) Capture of displaced air:	**CC**	BAT 34 (a-c) are not applicable – no solvent-based chemicals or creosote used on site

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	Vapours of solvents or creosote which are displaced from the receiving tank during filling are collected and led to a treatment unit, e.g. an activated carbon filter or a thermal oxidation unit. (c) Techniques to reduce evaporation losses due to heating up of stored chemicals: When exposure to sunlight may lead to evaporation of solvents and creosote stored in above-ground storage tanks, tanks are covered by a roof or coated with light-coloured paint to reduce the heating up of stored solvents and creosote. (d) Securing delivery connections: Delivery connections to storage tanks located within the bunded/contained area are secured and shut off when not in use. (e) Techniques to prevent overflows during pumping: This includes ensuring that the pumping operation is supervised; for larger quantities, bulk storage tanks are fitted with acoustic and/or optical high-level alarms, with shut-off systems if necessary. (f) Closed storage containers: Use of closed storage containers for treatment chemicals.		
BAT 35	**In order to reduce the consumption of treatment chemicals and the consumption of energy, and to reduce emissions of treatment chemicals, BAT is to optimise the wood charge of the vessel and to avoid trapping of treatment chemicals by using a combination of the techniques given below.**	**CC**	BAT 35 (a, b & d-f) are the techniques used

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	(a) Separation of wood in packs by spacers (b) Sloping of wood packs in traditional horizontal treatment vessels (c) Use of tilting pressure treatment vessels (d) Optimised positioning of shaped wood pieces (e) Securing wood packs (f) Maximisation of the wood load		
BAT 36	**In order to prevent accidental leakage and emissions of treatment chemicals from non-pressure processes, BAT is to use one of the techniques given below.** (a) Double-walled treatment vessels with automatic leak detection devices (b) Single-walled treatment vessels with sufficiently large and wood-preservative-resistant containment, fender and automatic leak detection device	**CC**	BAT 36 (b) is the technique used
BAT 37	**In order to reduce emissions of aerosols from wood and wood products preservation using water-based treatment chemicals, BAT is to enclose spraying processes, collect overspray and reuse it in the preparation of wood preservation solution.**	**CC**	
BAT 38	**In order to prevent or reduce emissions of treatment chemicals from pressure processes (autoclaves), BAT is to use all of the techniques given below.** (a) Process controls to prevent operation unless the treatment vessel door is locked and sealed	**CC**	

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	(b) Process controls to prevent the treatment vessel from opening while it is pressurised and/or filled with preservative solution (c) Catch-lock for the treatment vessel door (d) Use and maintenance of safety relief valves (e) Control of emissions to air from the vacuum pump exhaust (f) Reduction of emissions to air when opening the treatment vessel (g) Application of a final vacuum to remove excess treatment chemicals from the surface of treated wood		
BAT 39	**In order to reduce energy consumption in pressure processes (autoclaves), BAT is to use variable pump control.** *Description:* After reaching the required working pressure, the treatment system is switched to a pump with reduced power and energy consumption. *Applicability:* may be limited in the case of oscillating pressure processes.	**CC**	
BAT 40	**In order to prevent or reduce the contamination of soil or groundwater from the interim storage of freshly treated wood, BAT is to allow sufficient dripping time after treatment and to remove the treated wood from the contained/bunded area only once it is deemed dry.** *Description:* To allow the surplus treatment chemicals to drip back into the treatment vessel, treated wood/wood packs are held in the contained/bunded area (e.g. above the treatment vessel or over a dripping pad) for a sufficient time after the treatment and before transfer to the post-treatment drying area. Then, before leaving the post-treatment drying area, treated wood/wood packs are, for example, lifted by mechanical means	**CC**	

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	and suspended for a minimum of 5 minutes. If no dripping of treatment solution occurs, the wood is deemed to be dry.		
BAT 41	**In order to reduce the quantity of waste sent for disposal, especially of hazardous waste, BAT is to use the techniques (a) and (b) and one or both of the techniques (c) and (d) given below.** (a) Removal of debris prior to treatment (b) Recovery & reuse of waxes & oils (c) Bulk delivery of treatment chemicals (d) Use of reusable containers	**CC**	BAT 41 (a & d) are the techniques used
BAT 42	**In order to reduce the environmental risk related to waste management, BAT is to store waste in suitable containers or on sealed surfaces and to keep hazardous waste separately in a designated weather-protected and contained/bunded area.**	**CC**	
BAT 43	**BAT is to monitor pollutants in wastewater and potentially contaminated surface run-off water prior to each batch discharge in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.**	**NA**	All wastewater and run-off water is recovered and recycled through the system

<table>
<tr><th>BATc no</th><th>Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals</th><th>Status
NA
CC
FC
NC</th><th>Assessment proposed by the operator to demonstrate compliance with the BATc</th></tr>
<tr><td></td><td>
<table>
<tr><th>Substance/Parameter</th><th>Standard(s)</th></tr>
<tr><td>Biocides (1)</td><td>EN standards might be available depending on the composition of the biocidal products</td></tr>
<tr><td>Cu (2)</td><td>Various EN standards available (e.g. EN ISO 11885, EN ISO 17294-2, EN ISO 15586)</td></tr>
<tr><td>Solvents (3)</td><td>EN standards available for some solvents (e.g. EN ISO 15680)</td></tr>
<tr><td>PAHs (4)</td><td>EN ISO 17993</td></tr>
<tr><td>Benzo[a]pyrene (4)</td><td>EN ISO 17993</td></tr>
<tr><td>HOI</td><td>EN ISO 9377-2</td></tr>
</table>
(1) Specific substances are monitored, depending on the composition of the biocidal products in use in the process.
(2) The monitoring only applies if copper compounds are used in the process.
(3) The monitoring only applies to plants using solvent-based treatment chemicals. Specific substances are monitored, depending on the solvents in use in the process.
(4) The monitoring only applies to plants using creosote treatment.
</td><td></td><td></td></tr>
<tr><td>BAT 44</td><td>BAT is to monitor pollutants in groundwater with a frequency of at least once every 6 months and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent</td><td>CC</td><td></td></tr>
</table>

<table>
<tr><th>BATc no</th><th>Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals</th><th>Status
NA
CC
FC
NC</th><th>Assessment proposed by the operator to demonstrate compliance with the BATc</th></tr>
<tr><td></td><td>scientific quality. The monitoring frequency may be reduced to once every 2 years based on a risk assessment or if pollutant levels are proven to be sufficiently stable (e.g. after a period of 4 years).

<table>
<tr><td>Substance/ Parameter (1)</td><td>Standard(s)</td></tr>
<tr><td>Biocides (2)</td><td>EN standards might be available depending on the composition of the biocidal products</td></tr>
<tr><td>As</td><td>Various EN standards available
(e.g. EN ISO 11885, EN ISO 17294-2, EN ISO 15586)</td></tr>
<tr><td>Cu</td><td>Various EN standards available
(e.g. EN ISO 11885, EN ISO 17294-2, EN ISO 15586)</td></tr>
<tr><td>Cr</td><td>Various EN standards available
(e.g. EN ISO 11885, EN ISO 17294-2, EN ISO 15586)</td></tr>
<tr><td>Solvents (3)</td><td>EN standards available for some solvents
(e.g. EN ISO 15680)</td></tr>
<tr><td>PAHs</td><td>EN ISO 17993</td></tr>
<tr><td>Benzo[a]pyrene</td><td>EN ISO 17993</td></tr>
<tr><td>HOI</td><td>EN ISO 9377-2</td></tr>
</table>
(1) The monitoring may not apply if the substance concerned is not used in the process and if the groundwater is proven not to be contaminated with this substance.</td><td></td><td></td></tr>
</table>

<table>
<tr><th>BATc no</th><th>Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals</th><th>Status
NA
CC
FC
NC</th><th>Assessment proposed by the operator to demonstrate compliance with the BATc</th></tr>
<tr><td></td><td>(2) Specific substances are monitored, depending on the composition of biocidal products which are used or were previously used in the process.
(3) The monitoring only applies to plants using solvent-based treatment chemicals. Specific substances are monitored, depending on the solvents in use in the process.</td><td></td><td></td></tr>
<tr><td>BAT 45</td><td>BAT is to monitor emissions in waste gases with a frequency of at least once every year and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.
<table>
<tr><th>Parameter</th><th>Process</th><th>Standard(s)</th><th>Monitoring associated with</th></tr>
<tr><td>TVOC (1)</td><td>Wood and wood products preservation using creosote and solvent-based treatment chemicals</td><td>EN 12619</td><td>BAT 49, BAT 51</td></tr>
<tr><td>PAHs (1) (2)</td><td>Wood and wood products preservation using creosote</td><td>No EN standard available</td><td>BAT 51</td></tr>
<tr><td>NO_X (3)
CO</td><td>Wood and wood products preservation using creosote and solvent-based treatment chemicals</td><td>EN 14792
EN 15058</td><td>BAT 52</td></tr>
</table>
(1) To the extent possible, the measurements are carried out at the highest expected emission state under normal operating conditions.</td><td>NA</td><td>There are no emissions to air from the process - no solvent-based chemicals or creosote used on site</td></tr>
</table>

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	(2) This includes acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene. (3) The monitoring only applies to emissions from the thermal treatment of off-gases.		
BAT 46	**In order to prevent or reduce emissions to soil and groundwater, BAT is to use all of the techniques given below.** (a) Plant and equipment containment or bund (b) Impermeable floors (c) Warning systems for equipment identified as 'critical' - 'Critical' equipment (see BAT 30) is equipped with warning systems to indicate malfunctions (d) Prevention and detection of leaks from underground storage and ductwork for harmful/hazardous substances and record-keeping (e) Regular inspection and maintenance of plant and equipment (f) Techniques to prevent cross-contamination	**CC**	
BAT 47	**In order to prevent or, where that is not practicable, to reduce emissions to water and to reduce water consumption, BAT is to use all of the techniques given below.** (a) Techniques to prevent contamination of rain and surface run-off water (b) Collection of potentially contaminated surface run-off water	**CC**	

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	(c) Use of potentially contaminated surface run-off water (d) Reuse of cleaning water (e) Treatment of waste water (f) Disposal as hazardous waste		
BAT 48	**In order to reduce emissions to water from wood and wood products preservation using creosote, BAT is to collect the condensates from the depressurisation and vacuum operation of the treatment vessel and from creosote (re)conditioning and either treat them on site using an activated carbon or sand filter or dispose of them as hazardous waste.**	**NA**	No creosote used on site
BAT 49	**In order to reduce emissions of VOCs to air from wood and wood products preservation using solvent-based treatment chemicals, BAT is to enclose the emitting equipment or processes, extract the off-gases and send them to a treatment system (see techniques in BAT 51).**	**NA**	No solvent-based chemicals used on site
BAT 50	**In order to reduce emissions of organic compounds and odour to air from wood and wood products preservation using creosote, BAT is to use low-volatility impregnating oils, i.e. Grade C creosote instead of Grade B.** *Applicability:* Grade C creosote may not be applicable in the case of cold climatic conditions.	**NA**	No creosote used on site
BAT 51	**In order to reduce emissions of organic compounds to air from wood and wood products preservation using creosote, BAT is to enclose emitting equipment or processes (e.g. storage and impregnation tanks, depressurisation, creosote reconditioning), extract the off-gases and use one or a combination of the treatment techniques given below.**	**NA**	No creosote used on site

<table>
<tr><th>BATc no</th><th>Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals</th><th>Status
NA
CC
FC
NC</th><th>Assessment proposed by the operator to demonstrate compliance with the BATc</th></tr>
<tr><td></td><td>
<table>
<tr><th>Technique</th><th>Description</th></tr>
<tr><td>a. Thermal oxidation</td><td>Exhaust heat can be recovered by means of heat exchangers.</td></tr>
<tr><td>b. Sending off-gases to a combustion plant</td><td>Part or all of the off-gases are sent as combustion air and supplementary fuel to a combustion plant (including CHP (combined heat and power plants) used for steam and/or electricity production.</td></tr>
<tr><td>c. Adsorption using activated carbon</td><td>Organic compounds are adsorbed on the surface of activated carbon. Adsorbed compounds may be subsequently desorbed, e.g. with steam (often on site) for reuse or disposal and the adsorbent is reused.</td></tr>
<tr><td>d. Absorption using a suitable liquid</td><td>Use of a suitable liquid to remove pollutants from the off-gases by absorption, in particular soluble compounds.</td></tr>
<tr><td>e. Condensation</td><td>A technique for removing organic compounds by reducing the temperature below their dew points so that the vapours liquefy. Depending on the operating temperature range required, different refrigerants are used, e.g. cooling water, chilled water (temperature typically around 5°C), ammonia or propane.
Condensation is used in combination with another abatement technique.</td></tr>
</table>
</td><td></td><td></td></tr>
</table>

<table>
<tr><th>BATc no</th><th>Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals</th><th>Status
NA
CC
FC
NC</th><th>Assessment proposed by the operator to demonstrate compliance with the BATc</th></tr>
<tr><td></td><td>Table 36

BAT-associated emission levels (BAT-AELs) for TVOC and PAH emissions in waste gases from wood and wood products preservation using creosote and/or solvent-based treatment chemicals

<table>
<tr><th>Parameter</th><th>Unit</th><th>Process</th><th>BAT-AEL (Average over the sampling period)</th></tr>
<tr><td>TVOC</td><td>mg C/Nm^3</td><td>Creosote and solvent-based treatment</td><td>< 4–20</td></tr>
<tr><td>PAHs</td><td>mg/Nm^3</td><td>Creosote treatment</td><td>< 1 (1)</td></tr>
</table>
(1) The BAT-AEL refers to the sum of the following PAH compounds: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene.

The associated monitoring is given in BAT 45.</td><td></td><td></td></tr>
<tr><td>BAT 52</td><td>In order to reduce NO_X emissions in waste gases while limiting CO emissions from the thermal treatment of off-gases in wood and wood products preservation using creosote and/or solvent-based treatment chemicals, BAT is to use technique (a) or both of the techniques given below.</td><td>NA</td><td>No solvent-based chemicals or creosote used on site</td></tr>
</table>

<table>
<tr><th>BATc no</th><th>Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals</th><th>Status
NA
CC
FC
NC</th><th>Assessment proposed by the operator to demonstrate compliance with the BATc</th></tr>
<tr><td></td><td>(a) Optimisation of thermal treatment conditions (design and operation). Design applicability may be restricted for existing plants.

(b) Use of low-NO_X burners. Applicability may be restricted at existing plants by design and/or operational constraints.

Table 37

BAT-associated emission level (BAT-AEL) for NO_X emissions in waste gases and indicative emission level for CO emissions in waste gases to air from the thermal treatment of off-gases in wood and wood products preservation using creosote and/or solvent-based treatment chemicals

<table>
<tr><th>Parameter</th><th>Unit</th><th>BAT-AEL (1)
(Average over the sampling period)</th><th>Indicative emission level (1)
(Average over the sampling period)</th></tr>
<tr><td>NO_X</td><td>mg/Nm3</td><td>20–130</td><td>No indicative level</td></tr>
<tr><td>CO</td><td></td><td>No BAT-AEL</td><td>20–150</td></tr>
<tr><td colspan="4">(1) The BAT-AEL and indicative level do not apply where off-gases are sent to a combustion plant.</td></tr>
</table>

The associated monitoring is given in BAT 45.</td><td></td><td></td></tr>
<tr><td>BAT 53</td><td>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below.</td><td>CC</td><td></td></tr>
</table>

BATc no	Summary of BAT Conclusion requirement for Surface Treatment using Solvents including preservation of wood and wood products with chemicals	Status NA CC FC NC	Assessment proposed by the operator to demonstrate compliance with the BATc
	Storage and handling of raw materials: (a) Installation of noise walls and utilisation/optimisation of the noise-absorbing effect of buildings (b) Enclosure or partial enclosure of noisy operations (c) Use of low-noise vehicles/transport systems (d) Noise management measures (e.g. improved inspection and maintenance of equipment, closing of doors and windows) Kiln drying: (e) Noise reduction measures for fans The applicability is restricted to cases where a noise nuisance at sensitive receptors is expected and/or has been substantiated.		

Key Issues

Where relevant and appropriate, we have incorporated the techniques described by the operator in their BAT Review as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

Annex 2: Review and assessment of changes that are not part of the BAT Conclusions derived permit review

Soil & groundwater risk assessment (baseline report)

The IED requires that the operator of any IED installation using, producing or releasing 'relevant hazardous substances' (RHS) shall, having regarded the possibility that they might cause pollution of soil and groundwater, submit a 'baseline report' with its permit application. The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the regulated facility and at cessation of activities. It must enable a quantified comparison to be made between the baseline and the state of the site at surrender.

At the definitive cessation of activities, the operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the operator has to submit a surrender application to us, which we will not grant unless and until we are satisfied that these requirements have been met.

The operator submitted a site condition report reference UK15.1951 following the original application received on 28/01/2015. The site condition report included a report on the baseline conditions as required by Article 22. We reviewed that report and considered that it adequately described the condition of the soil and groundwater at that time. Consequently, we are satisfied that the baseline conditions have not changed.

Annex 3: Improvement Conditions

Based on the information in the operator's BAT Review and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation. These improvement conditions are set out below - justification for them is provided at the relevant section of the decision document.

Improvement condition for the implementation of a formal EMS

IC1 - The operator shall implement a formal Environmental Management System (EMS) by 09/12/2024. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit. The operator shall review their EMS against the requirements of BAT 1 and BAT 30 of the STS BAT Conclusions by 09/12/2024. The operator shall produce and implement an action plan to address those improvements required as a result of the review.