Permitting Decisions - Environment Agency Initiated Variation

We have decided to issue an Environment Agency initiated variation for Billingham Reed Beds operated by Scott Bros. Limited following a review of the permit in accordance with Environmental Permitting (England and Wales) Regulations 2016, regulation 34(1).

The variation number is EPR/JP3336HA/V005

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

Permit Review

The Environment Agency has a duty, under the Environmental Permitting (England and Wales) Regulations 2016 (EPR), regulation 34(1), to periodically review permits.

Article 21(3) of the Industrial Emissions Directive (IED) also requires the Environment Agency to review conditions in permits to ensure that they deliver compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions.

We have reviewed the permit for this activity and varied the notice to make a number of changes to reflect relevant standards and current best practice. These changes principally relate to the implementation of our technical guidance Non-hazardous and inert waste: appropriate measures for permitted facilities and the relevant requirements of the BAT Conclusions for Waste Treatment, which have been incorporated into our guidance.

In this decision document, we set out the reasoning for the variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the operator against our technical guidance.

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

Purpose of this document

This decision document provides a record of the decision making process. It:

- explains how the Environment Agency initiated variation has been determined;
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account;
- highlights key issues in the determination.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

Environment Agency led variation – permit review

We have carried out an Environment Agency initiated variation to the permit following a permit review as required by legislation to ensure that permit conditions deliver compliance with relevant legislative requirements and appropriate standards to protect the environment and human health.

The Industrial Emissions Directive (IED) came into force on 7 January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) Conclusions as described in the Commission Implementing Decision. Article 21(3) of the IED requires us to review conditions in permits issued and to ensure that the permit delivers compliance with relevant standards. This must be within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions.

The BAT Conclusions for Waste Treatment (the BATC) was published on 17 August 2018 following a European Union wide review of BAT, implementing decision (EU) 2018/1147 of 10 August 2018. Relevant existing facilities must be in compliance with the BAT Conclusions within 4 years.

Our technical guidance Non-hazardous and inert waste: appropriate measures for permitted facilities explains the standards that are relevant for regulated facilities with an environmental permit to treat or transfer non-hazardous wastes.

We issued a notice under regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 (a Regulation 61 Notice) on 08/11/2021 requiring the operator to provide information to confirm that the operation of their facility currently meets, or how it will subsequently meet, the standards in the Waste Treatment BAT Conclusions.

The notice required the operator to:

1. Provide a brief non-technical description of the regulated facility, including
    - all listed activities, waste operations and registered waste exemptions (if any).
    - a list of wastes handled at the site, the key stages in the "process" and the relevant disposal and recovery operations.
    - the scale of the operation i.e., the waste storage and daily treatment capacity of the process.
    - a brief description of the principal releases to air, land and water including noise, dust and odour, along with a description of any abatement techniques and site plan.
    - description of the site location and any key sensitive receptors.
2. Identify the BAT Conclusions that are applicable to the facility's operations. Confirm whether or not the operations comply with the requirements.
3. Where operations are not currently complying, the operator was required to provide:
    - details of how the relevant standards and requirements will be met.
    - details of how they will fully comply with the requirement by 17 August 2022.
    - justification as to why an alternative technique is appropriate and will achieve an equivalent level of environmental protection to the standards in the BAT Conclusion.
    - details of any activities they intend to cease operating by the compliance date (August 2022).
4. Confirm whether they operate a medium combustion plant or specified generator (as per Schedule 25A or 25B of EPR 2016).

The Non-hazardous and inert waste: appropriate measures for permitted facilities guidance was published on 12 July 2021 on gov.uk. This technical guidance explains the standards that are relevant to regulated facilities with an environmental permit to store, treat or transfer non-hazardous waste, providing relevant standards (appropriate measures) for those sites. The operators were notified about the new guidance and were advised to consider them in their submissions.

The standards described in our technical guidance are split into chapters:

- General management appropriate measures
- Waste pre-acceptance, acceptance and tracking appropriate measures
- Waste storage, segregation and handling appropriate measures
- Waste treatment appropriate measures
- Emissions control appropriate measures
- Emissions monitoring and limits appropriate measures
- Process efficiency appropriate measures

Our assessment of the responses received from the operator are summarised in Table 1.

The Regulation 61 Notice required the operator to confirm whether they could comply with the standards described in each of these chapters. Table 1 below provides a summary of the response received and our assessment of it. The overall status of compliance with the standards (appropriate measures) is indicated in the table as:

NA – Not Applicable

CC – Currently Compliant

FC – Compliant in the future (through improvement conditions set in permit)

NC/IC – Not Compliant; Improvement/New Condition included

Extent of this review

We have reviewed the operations that relate to the Installation activities in this permit against the relevant requirements of Best Available Techniques (BAT) Conclusions set out in implementing decision (EU) 2018/1147 of 10 August 2018.

Regulation 61 Response

The Regulation 61 notice response from the Operator was received on 15/01/2024.

We considered that the response did not contain sufficient information for us to commence determination of the permit review and we needed further information to complete the permit review assessment.

We sent a request for further information (RFI) by email to the operator on the 31/03/2025. The operator replied on 12/05/2025 and 19/05/2025 providing a number of documents and responses to the questions. Whilst some clarity was provided on a number of questions, there were still elements of the permitted operations which were not sufficiently explained to enable assessment of the site operations to determine compliance with the requirements of the Waste Treatment BAT conclusions. To address the outstanding issues, we held a meeting on the 12/06/2025 with the consultants, Tetra Tech, who represented the operator (Scott Bros Limited). As agreed in the meeting, we sent draft improvement conditions to the operator for their consideration.

The details of the improvement conditions were agreed with the operator and included in the permit. The improvement conditions require the operator to undertake various tasks and to submit reports to the Environment Agency in order to demonstrate compliance with BAT.

The responses received from the operator as part of this review are available on our public register.

The documents submitted by the operator which now form part of the operating techniques that the operator must implement are specified in table S1.2 in the environmental permit. These include:

- "*Response to Regulation 61 Notice EPRJP3336HAA001*" Pages:
  - 1-5 Regulation 61 Notice response
  - 15-18 Annex 2 BAT Conclusions
  - 19-20 Annex 3 Appropriate Measures
- "*TT-NB-Sch61Response 19.05.25*"

  Responses to questions:
  - 1 and 6 - emissions and monitoring
  - 2 and 4 - Waste acceptance and delivery
  - 12 – sludge management
  - 13 and 14 – water management
  - 15 and 16 – groundwater monitoring

  Annex B:
  - Settlement tank sludge removal process
  - Waste acceptance procedure

  Annex C:
  - Groundwater BH installation

Changes to the permit conditions

Following the assessment of the information provided by the operator in response to the Regulation 61 Notice, summarised in table 1, we have made the following changes to the permit conditions:

Conditions	**Amendment**
Condition 1.4.1	Condition format updated to match the modern template.
Condition 1.4.2	Condition added in line with the modern template.
Condition 2.3.4	Condition 2.6.1 of the previous variation has been renumbered as condition 2.3.4 to reflect the layout of the modern template.
Condition 2.3.6	Condition added in line with the modern template.
Condition 2.5	Pre-operational condition has been added for the emission to water. The follow-on condition has been renumbered.
Condition 3.1.1	Condition 3.1.1 of the previous variation has been moved to become condition 3.1.2 and condition 3.1.2 to become condition 3.1.1 to reflect the layout of the modern template.
Condition 3.5.1	Condition updated to include the process monitoring table.
Conditions 3.6	Condition added in line with the modern template.
Condition 4.1.1	Condition format updated to match the modern template.
Condition 4.2.2	Condition format updated to match the modern template.

Condition 4.2.3	Condition format updated to match the modern template.
Condition 4.2.5	Condition added in line with the modern template.
Condition 4.3.1	Condition format updated to match the modern template.
Condition 4.3.3	Condition added in line with the modern template.
Condition 4.3.4	Condition format updated to match the modern template.
Table S1.1 as referenced in condition 2.1.1	Scheduled activities and limits updated to reflect the site situation.
Table S1.2 as referenced in condition 2.3.1	Operating techniques updated to include the response documents to the Regulation 61 notice.
Table S1.3 as referenced in condition 2.4	Improvement conditions added/updated in the permit.
Table S1.4 as referenced in condition 2.5.1	Pre-operational condition added for the emission to surface water.
Table S3.1 as referenced in condition 3.1.1	Emission limits updated with relevant BAT AELs.
Table S3.2 as referenced in condition 3.1.1	Emissions limit table removed from the permit as there are no permitted emissions to ground. This has been replaced with process monitoring of ground water.
Table S4.1 as referenced in condition 4.2.3	Reporting requirement have been updated to include process monitoring.
Table S4.3 as referenced in condition 4.2.2	Other performance parameters reporting added to the table.
Table S4.4 as referenced in condition 4.2.3	Reporting forms updated.
Schedule 5	Schedule format updated to match the modern template.
Schedule 6	Interpretations updated to match the modern template.

Table 1 – Summary of our assessment of the operator's Reg 61 response

Appropriate measures	Compliance status	Assessment of the installation's compliance with relevant standards (appropriate measures) and any alternative techniques proposed by the operator
General management appropriate measures	CC	The operator responded by stating that the site is operated in accordance with an Environmental Management System (EMS). This includes procedures to ensure compliance with the permit, procedures on site operations, maintenance, competence and training, prevention of accidents and organisational and document management controls. Site operations are audited internally on an annual basis to enable a review of progress and targets for continual improvement. The site activities include: • Section 5.4, Part A(1)(a)(i) - Disposal of non-hazardous waste with a capacity of more than 50 tonnes per day involving biological treatment. • Section 5.4, Part A(1)(a)(ii) - Disposal of non-hazardous waste with a capacity of more than 50 tonnes per day involving physico-chemical treatment. • Raw material handling and storage. Treatment activities are undertaken within the reed beds located on site and the settlement tank. Technical competence is in place for the site and staff are provided with training suitable to their roles.
Waste pre-acceptance, acceptance and tracking appropriate measures	FC	The operator responded detailing pre-acceptance and acceptance procedures that are in place at the site. Preliminary screening acceptance criteria are included within the operating techniques. The response stated that a suite of representative verification sampling and analysis of waste composition would be undertaken by the operator prior to commencement of acceptance of waste. Only wastes which have been through this process would then be accepted onto site. Waste acceptance includes checks of waste carrier details, a check of site capacity, a description check against the waste being accepted and a visual inspection of the waste to check conformity. We have noted that the operator's sampling suite is not comprehensive enough for the waste streams being accepted and as such we have added Improvement Condition IC1 which requires the operator to submit an updated waste acceptance procedure and to undertake a full sampling suite of accepted waste streams, testing for all possible contaminants in the waste and soil/silt media that support the reed beds.
Waste storage, segregation and handling appropriate measures	N/A	Waste storage is not undertaken on site. Accepted wastes are either transferred directly for treatment within the reed beds or through the pre-treatment settlement tank before onward treatment within the reed beds.

Waste treatment appropriate measures	FC	The treatment process involves the receipt of gully sweeping wastes and landfill leachate for treatment for disposal. Treatment includes physico-chemical treatment via settlement and biological treatment within the reed beds in the case of gully sweepings or biological treatment only within the reedbeds for the landfill leachate. The operator detailed the process as being a natural waste treatment option where microbiological breakdown of organic materials takes place alongside the evaporation of volatile/soluble materials. Absorption is also detailed as taking place within the reedbeds. It is not clear from the information submitted by the operator that the reedbeds are effective in treating the incoming wastes. To address this, we have added improvement condition, IC2 which requires the operator to submit test results of the contaminants in both the incoming waste streams and silt/soil media of the reed beds, including evidence that the reed beds are treating all contaminants within the accepted waste and that these are not bioaccumulating within the soil media. IC2 also requires the operator to demonstrate that the reedbeds and all other treatment methods employed on site meet the requirements of BAT 20. Where this can't be demonstrated, the operator is required to propose and implement treatment improvements and cease further acceptance of waste until the proposed improvements are implemented.
Emissions control appropriate measures	FC	The operator stated that there are no channelled emissions to air or sewer. Although there is a permitted channelled emission point to water in the permit, the operator stated that this has not been used. Dust is not deemed to be of concern given the nature of the accepted wastes (mainly liquid). Mud and debris build up at the site is covered within the site's accident management plan and there is a wheel wash in place on site. There is potential for the site operations to produce odour, however, the operator has detailed a number of controls within their response that are in place to limit this occurrence. Tankers are connected directly to the hoses which distribute the effluent into the gravel filled ditches in the reed beds. The outlet pipe discharges below the surface of the liquid contained within the reedbed and this minimises odour generation. There is minimal disturbance and aeration which also limits odour generation. The operator has also stated that "*Odour is not considered a risk from the site activities, and no odour nuisance has been substantiated. No Odour Management Plan is currently in place, however the site operates in accordance with the EMS and is subject to daily inspections*."
Emissions monitoring and limits appropriate measures	FC	The operator stated that there are no channelled emissions to air or sewer. Although there is a permitted channelled emission point to water in the permit, the operator stated that this has not been used. The emissions monitoring table (Table S3.1 of the permit) has been updated to reflect BAT. The monitoring frequency, footnotes and monitoring standard have been updated. Some of the parameters and limits have been added newly to the permit while others remain unchanged.

		Parameters which have been added newly to the permit are: • Arsenic • Manganese • Hexavalent chromium (Cr(VI)) • Total nitrogen (Total N) • Total phosphorus (Total P) • Hydrocarbon oil index (HOI) • Phenol index • Adsorbable organically bound halogens • PFOA • PFOS • Benzene, toluene, ethylbenzene, xylene (BTEX) Parameters which were not changed are: • Barium • Cobalt • Ammonia (Ammoniacal Nitrogen) • BOD • Nitrate • pH • Fats, oils and grease • Suite of organic contaminants (TPH, PAH PCB pesticides) • Total daily volume of discharge The remaining parameters not listed above have had the relevant footnotes added and the monitoring frequency and standards updated to reflect BAT. A pre-operational condition has been added requiring the operator to submit a new H1 risk assessment to demonstrate that all of the contaminants in the discharge are below the emission limits given in table S3.1 and that they will not have any significant impact on the receiving waters. Where the H1 does not screen out and modelling is required, this must also be submitted within the report. Where the results of H1 risk assessment and/or modelling shows that the emission limits in Table S3.1 are not likely to be achieved, the report must include proposals for any further treatment methods required to be implemented to ensure that the emission meets the relevant limits. No discharge can be undertaken until this pre-operational condition is completed.

		Dust is not deemed of concern given the nature of the accepted wastes as being liquid. Mud and debris build up on site is covered in the sites accident management plan and there is a wheel wash in place on site. There is potential for the site operations to produce odour, however, the operator has detailed a number of controls within their response that are in place to limit this occurrence. Tankers are connected directly to the hoses which distribute the effluent into the gravel filled ditches in the reed beds. The outlet pipe discharges below the surface of the liquid contained within the reedbed and this minimises odour generation. There is minimal disturbance and aeration which also limits odour generation. The operator has also stated that "Odour is not considered a risk from the site activities and no odour nuisance has been substantiated. No Odour Management Plan is currently in place, however the site operates in accordance with the EMS and is subject to daily inspections." We have not included odour monitoring requirements in the permit. Although the operator has stated that there are no emissions to groundwater, it is not clear that the reedbeds are structurally sound and that the liner remains effective in preventing emissions to land/groundwater. As such we have included IC3 - IC5 in the permit which requires the operator to undertake an inspection of the groundwater condition and a review of all primary and secondary containment systems and site surfacing to ensure that they are fit for purpose and that there is no impact upon groundwater from the activities authorised under the permit. The operator is also required to ascertain the state, design and construction of all relevant impermeable surfaces and sealed drainage systems on site, including the reedbeds liners to confirm that they are in line with, or equivalent to the standards specified in CIRIA Report C736. Where it is identified that the liners or any of the infrastructure are not fit for purpose, the operator is required to carry out improvements to bring the facility in line with CIRIA 736 or an equivalent standard.
Process efficiency appropriate measures	CC	There are limited opportunities for process efficiency measures within the scope of the site's operations. The use of raw material is limited. No mains water is used on site and water usage is reviewed every 4 years. No packaging is used as part of the treatment process and waste is accepted in tankered vehicles. Energy use is limited with plant being powered by gas oil.
Regulation 61 Requirement	**Compliance status**	**Assessment of the installation's compliance with relevant standards (appropriate measures) and any alternative techniques proposed by the operator**
BAT 1 - EMS	CC	The operator responded by stating that the site is operated in accordance with an Environmental Management System (EMS). This includes procedures to ensure compliance with the permit, procedures on site operations, maintenance, competence and training, prevention of accident and organisation and document management controls. Site operations are audited internally on an annual basis to enable a review of progress and targets for continual improvement. A management system in place as required by BAT.

BAT 2 - Waste pre-acceptance, acceptance and tracking appropriate measures	FC	The operator responded by detailing pre-acceptance and acceptance procedures that are in place at the site. Preliminary screening acceptance criteria are included within the operating techniques. The response stated that a suite of representative verification sampling and analysis of waste composition would be undertaken by the operator prior to commencement of acceptance of waste. Only wastes which have been through this process would then be accepted onto site. Waste acceptance includes checks of waste carrier details, a check of site capacity, a description check against the waste being accepted and a visual inspection of the waste to check conformity. We have noted that the operator's sampling suite is not comprehensive enough for the waste streams being accepted and as such we have added Improvement Condition IC1 which requires the operator to submit an updated waste acceptance procedure and to undertake a full sampling suite of accepted waste streams, testing for all possible contaminants in the waste and soil/silt media that support the reed beds.
BAT 3 - Inventory of wastewater and waste gas streams	FC	The operator does not have an inventory of emissions. There are no channelled emissions to air or sewer at the site. There is an authorised emission to water in the permit however, this has not been used by the operator. A pre-operational condition has been added requiring the operator to submit a new H1 risk assessment to demonstrate that all of the contaminants in the discharge (inventory of emissions) are below the emission limits given in table S3.1 and that they will not have any significant impact on the receiving waters. Where the H1 does not screen out and modelling is required, this must also be submitted within the report. Where the results of H1 risk assessment and/or modelling shows that the emission limits in Table S3.1 are not likely to be achieved, the report must include proposals for any further treatment methods required to be implemented to ensure that the emission meets the relevant limits. No discharge can be undertaken until this pre-operational condition is completed.
BAT 4 - Storage procedures	N/A	Waste storage is not undertaken on site. There is no storage of waste associated with the permitted activities other than that which forms an integral part of the settlement tank treatment activity. Accepted wastes are transferred either directly for treatment within the read beds or through the pre-treatment settlement tank before onward treatment within the reed beds.
BAT 5 – Waste handling and transfer procedures	CC	The operator confirmed that they are operating in compliance with BAT. Waste transfer and handling procedures are in place. All wastes are delivered by tanker and discharged into either the reed beds or settlement tank. This is conducted via flexible hose and connection points. Following treatment in the settlement tank waste waters are collected by a tanker using flexible hosing and transferred from the settlement tank to the reed beds.

BAT 6 - monitor key process parameters	FC	The operator responded stating that the permit currently allows for the discharge of waters to the Billingham Beck. They stated that if this emission point were to be used that they would monitor in accordance with the permit. A pre-operational condition has been added requiring the operator to submit a new H1 risk assessment to demonstrate that all of the contaminants in the discharge are below the emission limits given in table S3.1 and that they will not have any significant impact on the receiving waters. Where the H1 does not screen out and modelling is required, this must also be submitted within the report. Where the results of H1 risk assessment and/or modelling shows that the emission limits in Table S3.1 are not likely to be achieved, the report must include proposals for any further treatment methods required to be implemented to ensure that the emission meets the relevant limits. No discharge can be undertaken until this pre-operational condition is completed.
BAT 7 - monitor emissions to water	FC	The operator responded stating that the permit currently allows for the discharge of waters to the Billingham Beck. They stated that if this emission point were to be used that they would monitor in accordance with the permit. A pre-operational condition has been added requiring the operator to submit a new H1 risk assessment to demonstrate that all of the contaminants in the discharge are below the emission limits given in table S3.1 and that they will not have any significant impact on the receiving waters. Where the H1 does not screen out and modelling is required, this must also be submitted within the report. Where the results of H1 risk assessment and/or modelling shows that the emission limits in Table S3.1 are not likely to be achieved, the report must include proposals for any further treatment methods required to be implemented to ensure that the emission meets the relevant limits. No discharge can be undertaken until this pre-operational condition is completed.
BAT 8 - monitor channelled emissions to air	N/A	There is no channelled emission to air. The permit does not allow channelled emissions to air.
BAT 9 - monitor diffuse emissions of organic compounds to air	N/A	The installation activities do not involve regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value. This BAT is therefore considered not applicable.
BAT 10 - monitor odour	CC	The operator responded, stating that "*Odour is identified as a potential fugitive emission from the site, and control measures such as containment of sludges/liquids to prevent escape of odour are implemented.*

		Although the odour pollution beyond the site boundary is considered low, olfactory walk over assessments are carried out on a daily basis in order to ensure the control measures implemented are effective." Odour monitoring is in place as required.
BAT 11 - monitor consumption of water, energy and raw materials, and generation of residues and wastewater	CC	The operator responded by stating that they are compliant with the requirements of this BATC. Permit condition is in place which requires the operator to submit end of year report for water, energy and raw materials usage. The only raw material used on site is gas oil to operate the mobile plant. No mains water is used as part of the processes on site. Scope for waste generation is limited based on the nature of the site operations.
BAT 12 - odour management plan	CC	The operator responded, stating that *"Odour is identified as a potential fugitive emission from the site, and control measures such as containment of sludges/liquids to prevent escape of odour are implemented.* *Although the odour pollution beyond the site boundary is considered low, olfactory walk over assessments are carried out on a daily basis in order to ensure the control measures implemented are effective."* Odour monitoring is in place as required. It is not considered that an Odour Management Plan is required at present however, there is a permit condition which can require one at any stage should compliance issue emerge.
BAT 13 - reduce odour emissions	CC	The operator responded, stating that *"Odour is identified as a potential fugitive emission from the site, and control measures such as containment of sludges/liquids to prevent escape of odour are implemented.* *Although the odour pollution beyond the site boundary is considered low, olfactory walk over assessments are carried out on a daily basis in order to ensure the control measures implemented are effective."* Odour monitoring is in place as required. It is not considered that an Odour Management Plan is required at present however, there is a permit condition which can require one at any stage should compliance issues emerge.
BAT 14 - reduce diffuse emissions to air	CC	Given the nature of the operations, the scope for diffuse emissions is limited. Liquid wastes do not generate dust so the primary source of any dust emissions would be from traffic movements. A wheel wash is in place. There is potential for the site operations to produce odour, however, the operator has detailed a number of controls within their response that are in place to limit this occurrence. Tankers are connected directly the hoses which distribute the effluent into the gravel filled ditches in the reed beds. The outlet pipe discharges below the surface of the liquid contained within the reedbed and

		this minimises odour generation. There is minimal disturbance and aeration which also limits odour generation. The operator has also stated that "*Odour is not considered a risk from the site activities and no odour nuisance has been substantiated. No Odour Management Plan is currently in place, however the site operates in accordance with the EMS and is subject to daily inspections."*
BAT 15 - minimise use of flaring	N/A	Given the nature of the waste treatment operations, we agreed that this BAT is not applicable.
BAT 16 - reduce emissions to air from flares	N/A	Given the nature of the waste treatment operations, we agreed that this BAT is not applicable.
BAT 17 - noise and vibration management plan	CC	The operator responded, stating that "*Noise emissions from the site are considered very low. A specific Noise Management Plan is not in place nor required in order to manage noise.*" It is agreed that the risk of noise from the operations is low. If this does change however, there is a permit condition which can require the assessment of noise and submission of a Noise Management Plan.
BAT 18 - reduce noise and vibration emissions	CC	The operator responded stating that "*Noise emissions from the site are considered very low. A specific Noise Management Plan is not in place nor required in order to manage noise.*" It is agreed that the risk of noise from the operations is low. If this does change however, there is a permit condition which can require the assessment of noise and submission of a Noise Management Plan.
BAT 19 - optimise water consumption, reduce wastewater and prevent or reduce emissions to soil and water	FC	The operator responded to the Regulation 61 notice stating that they are compliant with BAT 19. However, the Environment Agency have concerns over the impermeability of the treatment area and reed beds. BAT 19 requires the use of an impermeable surface and it has not been demonstrated that the reed beds are impermeable. As such we have included IC3 - IC5 in the permit which requires the operator to undertake an inspection of the groundwater condition and a review of all primary and secondary containment systems and site surfacing to ensure that they are fit for purpose and that there is no impact upon groundwater from the activities authorised under the permit. The operator is also required to ascertain the state, design and construction of all relevant impermeable surfaces and sealed drainage systems on site, including the reedbeds liners to confirm that they are in line with, or equivalent to the standards specified in CIRIA Report C736.
BAT 20 - waste water treatment	FC	The operator responded stating that they are in compliance with BAT 20. This cannot currently be demonstrated. The composition of the waste is not fully understood and therefore it cannot be concluded that the reed beds treat all potential contaminants. To address this, we have added improvement condition, IC2 which requires the operator to submit test results of the contaminants in both the incoming waste streams and silt/soil media of the reed beds, including evidence that the reed beds are treating all contaminants within the accepted waste and that these are not bioaccumulating within the soil media. IC2 also requires the operator to demonstrate that the reedbeds and all other treatment methods employed on site meet the requirements of BAT 20. Where this can't be demonstrated, the operator is required to propose and implement treatment

		improvements and cease further acceptance of waste until the proposed improvements are implemented.
BAT 21 - prevent or limit the environmental consequences of accidents and incidents	CC	The operator responded confirming that they are in compliance with this BAT requirement. An accident management plan is in place for the site and this provides a risk assessment that identifies possible hazards arising from the reed bed operation and mitigation measures designed to minimise the risk and consequence of accidents occurring.
BAT 22 - substitute materials with waste	N/A	Given the nature of the waste treatment operations, we agreed that this BAT is not applicable.
BAT 23 - Energy efficiency plan, energy balance record	CC	The operator responded stating that they are compliant with BAT and there is limited scope for energy management. Plant on site is fuelled with gas oil. No energy Efficiency Plan is in place as it is not deemed applicable. Given the nature of the waste treatment operations, we agreed that this BAT is not applicable.
BAT 24 - maximise reuse of packaging	N/A	Given the nature of the waste treatment operations, we agreed that this BAT is not applicable.
BAT 25 - General - Emissions to air (Techniques to reduce plus AEL for dust).	N/A	There are no channelled emissions of dust from the process. As such this requirement is not relevant to the operations.
BAT 26 - Metal shredders (Reduce accidents & incidents)	N/A	The installation is for the biological treatment of liquid wastes for disposal. There is no treatment in shredders of metal waste, including WEEE and ELVs and their components and as such we agree that BAT 26 does not apply.
BAT 27 - Deflagrations (Prevent & reduce emissions from deflagrations)	N/A	The installation is for the biological treatment of liquid wastes for disposal. There is no treatment in shredders of metal waste, including WEEE and ELVs and their components and as such we agree that BAT 27 does not apply.
BAT 28 - Energy efficiency (Shredder feed stability)	N/A	The installation is for the biological treatment of liquid wastes for disposal. There is no treatment in shredders of metal waste, including WEEE and ELVs and their components and as such we agree that BAT 28 does not apply.
BAT 29 - WEEE containing VFCs and/or VHCs (Emissions of organic compounds to air including AELs)	N/A	Given the nature of the waste treatment operations and waste types, we agreed that this BAT is not applicable. There is no treatment in shredders of metal waste, including WEEE, ELVs and their components and there are no channelled emission points to air at the site.
BAT 30 - Explosions when treating WEEE (Prevent emissions due to explosions)	N/A	Given the nature of the waste treatment operations and waste types, we agreed that this BAT is not applicable. There is no treatment in shredders of metal waste, including WEEE and ELVs and their components. There is a non-conforming waste procedure in place at the site.

BAT 31 - Emissions to air (Techniques to reduce emissions to air including AEL)	N/A	There is no channelled emission to air and the permit does not allow channelled emission to air.
BAT 32 - WEEE containing mercury (Emissions to air including AEL)	N/A	WEEE is not being treated at the site. There is no channelled emission to air and the permit does not allow channelled emission to air.
BATs 33 - 51	N/A	We considered that BATs 33 - 51 are not applicable to installations treating water-based liquid waste.
BAT 52 - Environmental performance	FC	The operator responded detailing pre-acceptance and acceptance procedures that are in place at the site. Preliminary screening acceptance criteria are included within the operating techniques. The response stated that a suite of representative verification sampling and analysis of waste composition would be undertaken by the operator prior to commencement of acceptance of waste. Only wastes which have been through this process would then be accepted onto site. Waste acceptance includes checks of waste carrier details, a check of site capacity, a description check against the waste being accepted and a visual inspection of the waste to check conformity. We have noted that the operator's sampling suite is not comprehensive enough for the waste streams being accepted and as such we have added Improvement Condition IC1 which requires the operator to submit an updated waste acceptance procedure and to undertake a full sampling suite of accepted waste streams, testing for all possible contaminants in the waste and soil/silt media that support the reed beds.
BAT 53 - Emissions to air	N/A	The operator confirmed that they are compliant with this BATc. They stated that the reed beds operate as a biofilter in line with BAT 53. They also state that absorption will take place during the treatment process. We do not consider this BAT to be relevant as it is concerned with emissions to air of which there are none within the permitted operations.
Reg. 61 Request for Further Information (RFI)		
• Provide an inventory of emissions as required under BAT 3 of the Waste Treatment BAT Conclusions	The operator has responded stating that there are no emissions and therefore they do not hold an emissions inventory. A pre-operational condition has been added requiring the operator to submit a new H1 risk assessment to demonstrate that all of the contaminants in the discharge are below the emission limits given in table S3.1 and that they will not have any significant impact on the receiving waters. Where the H1 does not screen out and modelling is required, this must also be submitted within the report.	

	Where the results of H1 risk assessment and/or modelling shows that the emission limits in Table S3.1 are not likely to be achieved, the report must include proposals for any further treatment methods required to be implemented to ensure that the emission meets the relevant limits. No discharge can be undertaken until this pre-operational condition is completed.
• What is the composition of the waste accepted onto the site?	In response to this question the operator provided the waste code table for waste types which they are accepting at the site. They also provided their acceptance screening criteria for both waste streams. This response was not deemed sufficient and as such IC1 and IC2 have been included within the permit to address this.
• What is the composition of the effluent discharged into the reed beds?	In response to this question the operator responded stating that the composition was in line with the provided acceptance criteria. This response was not deemed sufficient and as such IC1 and IC2 have been included within the permit for the operator to provide updated waste acceptance procedures and sampling results.
• How are wastes discharged into the site treatment?	The provided response detailed the discharge method of gully sweeping and landfill leachate. The response was deemed sufficient.
• What evidence do you have to support the conclusions that reedbeds are effective in the treatment of the accepted wastes?	The response stated "*The reeds are growing healthy and are evenly distributed throughout the beds with new reeds growing throughout fully grown established reeds*." This does not provide any evidence of effective treatment. IC2 has been added to the permit requiring the operator to demonstrate that the treatment methods are effective.
• Is the required infrastructure in place for process and emission monitoring to satisfy Bat 6 and 7 of the Waste Treatment BAT Conclusions	The operator has responded stating that there are no emissions and therefore they do not currently have anything to monitor. A pre-operational condition has been added requiring the operator to submit a new H1 risk assessment to demonstrate that all of the contaminants in the discharge are below the emission limits given in table S3.1 and that they will not have any significant impact on the receiving waters. Where the H1 does not screen out and modelling is required, this must also be submitted within the report. Where the results of H1 risk assessment and/or modelling shows that the emission limits in Table S3.1 are not likely to be achieved, the report must include proposals for any further treatment methods required to be implemented to ensure that the emission meets the relevant limits. No discharge can be undertaken until this pre-operational condition is completed.
• Provide information on how emissions to soil and groundwater are prevented	Response: "*There are no emissions to soil or groundwater, the reed beds are engineered with a clay liner and plastic membrane*" This response is not deemed sufficient and as such IC3 - IC5 have been included in the permit which requires the operator to undertake an inspection of the groundwater condition and a review of all primary and secondary containment systems and site surfacing to ensure that they are fit for purpose and that there is no impact upon groundwater from the activities authorised under the permit. The operator is also required to ascertain the state, design

	and construction of all relevant impermeable surfaces and sealed drainage systems on site, including the reedbeds liners to confirm that they are in line with, or equivalent to the standards specified in CIRIA Report C736.
• What are the design standards and specifications of the reed beds? Is it in line with the standard specified in CIRIA 736? What systems do you have in place to ensure that the integrity of the reed beds is checked, reviewed and signed off by a certified engineer and when was the last time such checks were conducted?	Response "*The site was constructed in the 1980's before CIRIA 736 was published. It was constructed by ICI to treat their effluent and is considered to be in robust health*." This response is not deemed sufficient and as such IC3 - IC5 have been included in the permit which requires the operator to undertake an inspection of the groundwater condition and a review of all primary and secondary containment systems and site surfacing to ensure that they are fit for purpose and that there is no impact upon groundwater from the activities authorised under the permit. The operator is also required to ascertain the state, design and construction of all relevant impermeable surfaces and sealed drainage systems on site, including the reedbeds liners to confirm that they are in line with, or equivalent to the standards specified in CIRIA Report C736.
• What maintenance programme do you have in place to ensure that the reed beds are operating as expected? Provide the latest report from such a maintenance programme.	Response "*The quality and health of the reed beds is visually assessed on a daily basis by the site manager. Should the health of the reed beds appear poor visually, SBL would arrange for their sub-contractor to visit the site as soon as possible and recommend remedial actions.*" This response is not deemed sufficient and as such IC6 has been included within the permit requiring the operator to submit an updated scheme of maintenance for the reedbed systems.
• What evidence do you have to support the conclusions that the reedbeds are effective in the treatment of the accepted wastes? How do you evaluate the efficiency of the reed beds and the media in which they grow.	No evidence was provided. IC2 has been added to the permit requiring the operator to demonstrate that the treatment methods are effective.
• What evidence do you have to demonstrate that the contaminants absorbed by the reed bed are not being	No evidence was provided. IC2 has been added to the permit requiring the operator to demonstrate that the treatment methods are effective. This will also require testing for bioaccumulation of contaminants.

released back into the growing media?	
• What happens to the sludge when it is removed from the pre-treatment tank?	A procedure for the removal of sludge from the settlement tank was provided. This was deemed sufficient.
• How are water levels managed to ensure no overtopping of the reedbeds occurs?	The operator provided this response "*No water is taken or discharged from the reed beds; water levels are managed naturally through evaporation. Levels are maintained by use of different reed beds on rotation to ensure that no surface water emission is required.*" This is deemed sufficient.
• Confirm the structure and function of the wheel wash and the level of pollutants contained within the wheel wash waters.	Clarity was provided that effluent is not used in the wheel wash. Only clean water is used.
• Provide information on your groundwater monitoring activities at the site. How do you ascertain that your site activities are not having impact on the underlying groundwater?	Baseline borehole monitoring was conducted when boreholes were installed in 2011. The sampling parameters were provided in response to this RFI but these were considered not sufficient IC3 and IC5 have been included in the permit which require monitoring of boreholes to demonstrate that there is no impact on ground water from the reed beds. IC5 more specifically requires the operator to submit for approval and implementation a methodology and frequency for the on-going continued monitoring of ground water boreholes.
• What works were carried out to fulfil IC1	Evidence was provided that boreholes were installed in 2011. The response was deemed sufficient.