

## **Environment Agency**

### **Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2016**

#### **Decision document recording our decision-making process following review of a permit**

The Permit number is: EPR/BK6408IG  
The Operator is: Royston Lead Limited  
The Installation is: Pogmoor Works  
This Variation Notice number is: EPR/BK6408IG/V003

#### **What this document is about**

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on BAT Conclusions.

We have reviewed the permit for this installation against the revised BAT Conclusions for the non-ferrous metals industries sector published on 30<sup>th</sup> June 2016 in the Official Journal of the European Union. Where appropriate, we also considered other relevant BAT Conclusions published prior to this date but not previously included in a permit review for the Installation. In this decision document, we set out the reasoning for the consolidated variation notice 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 the decision made by the European Commission establishing best available techniques (BAT) conclusions (BATc) for the non-ferrous metals industries as detailed in the Official Journal of the European Union (L174) following a European Union, implementing decision (EU) 2016/1032 of 13<sup>th</sup> June 2016. 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 takes into account and brings together in a

single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we therefore address only our determination of substantive issues relating to the new BAT Conclusions.

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**

1. Our proposed decision
2. How we reached our decision
3. The legal framework
4. Annex 1- Review of operating techniques within the Installation against BAT Conclusions
5. Annex 2a - Review and assessment of derogation request(s) made by the operator in relation to BAT Conclusions which include an Associated Emission Level (BAT-AEL) value
6. Annex 2b - Consultation responses
7. Annex 3 - Improvement Conditions
8. Annex 4 - Review and assessment of changes that are not part of the BAT Conclusions derived permit review
9. Annex 5 – Priority Compliance Issues & Detailed assessment of Regulation 60 Notice responses where future action likely

# 1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow it to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice 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 that a high level of protection is provided for the environment and human health.

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

## 2 How we reached our decision

### 2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 16<sup>th</sup> December 2016 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the operator should provide information that

- Describes the techniques that will be implemented before 30<sup>th</sup> June 2020, which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 30<sup>th</sup> June 2020, 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 Regulation 60 Notice required that the Operator make a formal request for derogation from compliance with that AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 60 Notice response from the Operator was received on 22<sup>nd</sup> March 2017.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review- but not that it necessarily contained all the information we would need to complete that determination.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that 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 5, 6, 9 and 93 . In relation to these BAT Conclusions, we have included Improvement Condition 1 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusion are delivered before 30<sup>th</sup> June 2020

## 2.3 Requests for Further Information during determination

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request in the form of a Regulation 61 Notice on 02/11/2017. A copy of the further information request was placed on our public register.

In addition to the responses to our further information request, we received additional information and/or clarification from the operator during the determination as follows:

- Response to our email dated 21/11/2017, received 28/11/2017, regarding BAT 2.
- Response to our email dated 21/11/2017, received 18/12/2017, regarding an updated site plan.

We made a copy of this information available to the public in the same way as the response(s) to our information request(s).

#### 2.4 Surface Water Pollution Risk Assessment

As part of our delivery of the Water Framework Directive (WFD) requirements, we need to identify and assess the impact of all sources of hazardous pollutants to surface waters from regulated industry. We use the term 'hazardous pollutants' to collectively describe substances covered by the EQSD (priority hazardous substances, priority substances and "other pollutants"). It also applies to the specific pollutants listed in the 2015 Directions, and substances which have operational (non-statutory) Environmental Quality Standards (EQS).

For all installations with discharges to surface water and/or sewer we required the operator, via our Regulation 60 Notice, to undertake a surface water pollution risk assessment, in two stages, as follows:

a) Provide emissions data for the following hazardous pollutants: silver, arsenic, cadmium, cobalt, chromium (total), chromium (VI), copper, mercury, nickel, lead and zinc. The BAT Conclusions for the Non-Ferrous Metals Industries specify BAT-AELs associated with the direct discharge of these substances to surface water. We therefore considered that these substances potentially posed the highest risk from industry and listed them in our Regulation 60 Notice. In addition, operators were required to identify and assess any other hazardous pollutants that may be present in their effluent. A full list of hazardous pollutants is included in our surface water pollution risk assessment guidance, which we 'signposted' operators to via the Regulation 60 Notice.

b) Undertake a risk assessment using the above emissions data to determine whether any hazardous pollutants were liable to cause pollution of the downstream receiving waters. The WFD requires Member States to prior regulate, all substances in a discharge which are "liable to cause pollution". Previously discharges from the Non-Ferrous Metals Industries were controlled on a "liable to contain" approach set by the Dangerous Substances Directive through either numeric limits, or descriptive conditions. Under the "liable to cause pollution" approach we would only consider applying numeric emission limits to those pollutants calculated to have the potential to cause pollution.

The risk assessment methodology uses a number of sequential screening steps to determine if a substance warrants detailed modelling and hence any emission limits being required, namely:

- Screen out insignificant emissions that do not warrant further investigation;
- Determine if significant load test is failed (for priority hazardous substances only);
- Decide if detailed modelling is needed;
- Assess emissions against relevant standards and set permit limits where considered necessary.

The methodology provides for undertaking assessments of both direct and indirect discharges to surface water, 'indirect' meaning that the effluent is discharged to foul sewer from the installation and is treated at a sewage treatment works (STW) prior to discharge to surface water. Treatment at the STW will remove a proportion of a discharged substance from the final effluent discharged to the environment. This removal needs to be taken into account when calculating the concentration of a hazardous pollutant which will be discharged to a receiving water via the sewage works. This is achieved by applying STRFs (sewage treatment reduction factors) within the screening steps.

The operator has confirmed that there is no water used in the process and therefore no process water is discharged to surface water or to sewer. There is a single discharge of uncontaminated site drainage to sewer. As a result it has been determined that this requirement is not applicable to the site.

## 2.5 Condition of Soil and Groundwater

Articles 16 and 22 of the Industrial Emissions Directive (IED) require that a quantified baseline is established for the level of contamination of soil and groundwater with hazardous substances, in order that a comparison can be made on final cessation of activities.

We have used the non-ferrous metals permit review to regulate against the above IED requirements. Our Regulation 60 Notice required operators, where the activity of the installation involved the use, production or release of a relevant hazardous substance (as defined in Article 3(18) of the Industrial Emissions Directive), to carry out a risk assessment considering the possibility of soil and groundwater contamination at the installation with such substances. Where any risk of such contamination was established we requested that the operator either:

- prepare and submit a baseline report containing information necessary to determine the current state of soil and groundwater contamination; or

- provide a summary report referring to information previously submitted where they were satisfied that such information represented the current state of soil and groundwater contamination

so as to enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation the activity.

Where operators concluded that there were no risks of soil or groundwater contamination (due to there not being any release of hazardous substances), they were required to provide a copy of the risk assessment.

The operator has confirmed the Environment Agency that the existing Site Condition Report is still accurate and is still representative of the site.

### **3 The legal framework**

The Consolidated Variation Notice 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, 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.

We have set emission limit values (ELV's) in line with the BAT Conclusions, unless a tighter, i.e. more stringent, limit was previously imposed and these limits have been carried forward. For emissions to each relevant environmental receptor (i.e. air, or surface water), the emission limits and monitoring requirements are incorporated into the Consolidated Variation Notice via a table in Schedule 3 – Emissions and monitoring.

For each environmental receptor the table in Schedule 3 specifies:

- the ELV's and monitoring requirements effective upon issue of the notice; and
- where the BAT Conclusions contain a BAT-AEL which is tighter than the current ELV, the new BAT-AEL is specified with a note alongside to indicate that it shall take effect from 30<sup>th</sup> June 2020; and



- any associated updated monitoring requirements that will take effect from 30<sup>th</sup> June 2020.

## **Annex 1**

### **Review of operating techniques within the Installation against BAT Conclusions**

BAT Conclusions for the non-ferrous metals industries, were published by the European Commission on 30<sup>th</sup> June 2016. There are 184 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.

The overall status of compliance with the BAT conclusion is indicated in the table as:

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

**Table 1: Decision checklist for relevant BAT Conclusions**

| Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries | Status<br>NA / CC /<br>FC / NC | Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement<br>Type of process: LEAD AND/OR TIN PRODUCTION   |
|---|--------------------------------|--|
| BAT Conclusions that are not applicable to this installation            | NA                             | <p><b>General BAT Conclusions for Non-Ferrous Metals Industries: 10, 11, 12, 14, 15, 16, 17</b></p> <p>BAT Conclusions for copper production: 20-54 inclusive<br/>           BAT Conclusions for alumina production: 55-57 inclusive<br/>           BAT Conclusions for anode production: 58-63 inclusive<br/>           BAT Conclusions for primary aluminium production: 64-73 inclusive<br/>           BAT Conclusions for secondary aluminium production: 74-86 inclusive<br/>           BAT Conclusions for salt slag recycling process: 87-89 inclusive</p> <p><b>BAT Conclusions for lead and/or tin production: 90, 91, 94, 95, 97, 98, 99, 101, 102, 103, 104, 105, 106</b></p> <p>BAT Conclusions for primary zinc production: 108-120 inclusive<br/>           BAT Conclusions for secondary zinc production, 121-130 inclusive<br/>           BAT Conclusions for cadmium production: 131-133 inclusive<br/>           BAT Conclusions for precious metals production: 134-149 inclusive<br/>           BAT Conclusions for ferro-alloys production: 150-162 inclusive<br/>           BAT Conclusions for nickel and/or cobalt production: 163-176 inclusive<br/>           BAT Conclusions for carbon and/or graphite production: 177-184 inclusive</p> |

| <b>Table 1: Decision checklist for relevant BAT Conclusions</b>   |   |  |
|---|---|--|
| <b>Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries</b>  | <b>Status<br/>NA / CC /<br/>FC / NC</b> | <b>Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement<br/>Type of process: LEAD AND/OR TIN PRODUCTION</b> |
| BAT Conclusions where we accept the operator's Reg 60 notice response that they are currently compliant and no further explanation is required.                                     | <b>CC</b>                               | <b>General BAT Conclusions for Non-Ferrous Metals Industries: 1, 3, 4, 7, 8, 18, 19</b><br><b>BAT Conclusions for lead and/or tin production: 92, 96, 107</b>  |
| BAT Conclusions where improvements will be undertaken on site within the 4 year period in order to achieve compliance with the narrative and/or BATAEL prior to the 4 year deadline | <b>FC</b>                               | <b>General BAT Conclusions for Non-Ferrous Metals Industries: 2, 5, 6, 9</b><br><b>BAT Conclusions for lead and/or tin production:93</b>                       |
| BAT Conclusions where the Operator has responded that they are not compliant and have not submitted any plans to become compliant   | <b>NC</b>                               | <b>None.</b>   |

## **Key Issues**

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 / 61 Notice responses as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

## **Annex 2a**

### **Assessment, determination and decision where an application(s) for Derogation from BAT Conclusions with associated emission levels (AEL) has been requested.**

The IED enables a competent authority to allow derogations from BAT AELs stated in BAT Conclusions under specific circumstances as detailed under Article 15(4):

‘By way of derogation from paragraph 3, and without prejudice to Article 18, the competent authority may, in specific cases, set less strict emission limit values. Such a derogation may apply only where an assessment shows that the achievement of emission levels associated with the best available techniques as described in BAT Conclusions would lead to disproportionately higher costs compared to the environmental benefits due to:

(a) the geographical location or the local environmental conditions of the installation concerned; or

(b) the technical characteristics of the installation concerned.

The competent authority shall document in an annex to the permit conditions the reasons for the application of the first subparagraph including the result of the assessment and the justification for the conditions imposed. ‘

A summary of any derogation granted is also recorded in Annex of the Consolidated Variation Notice in accordance with the requirement of IED Article 15(4) as described above.

The Operator did not request derogation from compliance with any AEL included within the BAT Conclusions as part of their Regulation 60 Notice response.

## **Annex 2b**

### **Advertising and Consultation on the draft decision**

This section is not applicable as no derogations from BAT-AEL's have been considered, nor is the installation a site of high public interest.

## Annex 3

### Improvement Conditions

Based on the information in the Operator's Regulation 60 / 61 Notice responses 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 - justifications for them is provided at the relevant section of the decision document.

All existing improvement conditions within the permit have been removed as they have either been completed or are no longer relevant.

We also consider that we need to set improvement conditions relating to changes in the permit not arising from the review of compliance with BAT Conclusions. The justifications for these are provided in Annex 4 of this decision document.

If the consolidated permit contains existing improvement conditions that are not yet complete or the opportunity has been taken to delete completed improvement conditions then the numbering in the table below will not be consecutive as these are only the improvement conditions arising from this permit variation.

| <b>Reference</b> | <b>Improvement Condition</b>  | <b>Completion date</b>                      |
|------------------|---|---|
| IC1              | <p>The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the 'Narrative' BAT where BAT is currently not achieved, but will be achieved before 30<sup>th</sup> June 2020. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"><li>1) Methodology for achieving BAT.</li><li>2) Associated targets / timelines for reaching compliance by 30<sup>th</sup> June 2020</li><li>3) Any alterations to the initial plan</li></ol> <p>The report shall address the following BATc:</p> <p><b>BAT 5</b> ("...to prevent or, ... to reduce diffuse emissions to air and water BAT is to collect diffuse emissions as much as possible nearest to the source and treat them...")</p> <p><b>BAT 6</b> ("...to set up an implement an action plan on diffuse dust emissions, as part of the environmental management system...")</p> | Progress reports by 06/06/2018, 06/06/2019. |



| <b>Table S1.3 Improvement programme requirements</b> |  |  |
|--|--|--|
| <b>Reference</b>                                     | <b>Improvement Condition</b>   | <b>Completion date</b>   |
|  | <p>Refer to BAT Conclusions for a full description of the BAT 5 and/or BAT 6 requirements.</p> <p><b>BAT 9</b> (“...to optimise the efficiency of off-gas collection and treatment by using a combination of techniques...”) Refer to BAT Conclusions for a full description of the BAT 9 requirement.</p> <p><b>BAT 93</b> (“...to prevent or reduce diffuse emissions from remelting, refining, and casting in primary and secondary lead production...”) Refer to BAT Conclusions for a full description of the BAT 93 requirement.</p> |  |
| IC2  | <p>The operator shall carry out an options appraisal for the further reduction of emissions of oxides of nitrogen (NOx) for when the remaining burners without low NOx capability reach the end of their operational life. A report giving details (and outcome) of this appraisal shall be sent to the Environment Agency in writing together with a timetable to implement any proposed changes identified.</p>  | <p>At least 2 months prior to the installation of new burners.</p> |

## **Annex 4**

### **Review and assessment of changes that are not part of the BAT Conclusions derived permit review.**

#### **Low NOx Burners**

As part of the NFM BATc permit review the operator confirmed that they currently have seven natural gas burners on site. Of these seven burners five have low NOx technologies which leaves two burners that have not yet upgraded to low NOx burners. The site have proposed within their Regulation 60 response that when the current burners reach the end of their lives they will replace them with burners that utilise low NOx technologies.

For this site, there is not an applicable BAT conclusion which requires process equipment to have burners with low NOx technology. However the Environment Agency considers that the operators suggestion to replace the current burners with low NOx burners when they need to be replaced is part of continual improvement that the Environment Agency would expect the operator to implement on site. We have therefore added improvement condition IC2 to permit which will require the operator to consider low NOx technologies when they replace the remaining burners on site.

## Annex 5

### Priority Compliance Issues & detailed assessment of Regulation 60 Notice responses where future action likely

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc            |
|-------------|---|---------------------------|--|---|---|--|
|             | <b>BAT 1-19: General requirements</b>   |                           |  |   |   |  |
| 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 features given | 1.1                       | CC   | CC  | <p>The operator has confirmed in their response that they are currently compliant with BAT 1.</p> <p>The operator's response confirms that Royston Lead Limited has an ISO14001 accredited Environmental Management System.</p> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> | None.  |
| 2           | In order to use energy efficiently, BAT is to use a combination of the techniques given   | 1.2                       | CC   | FC  | <p>The operator initially confirmed in their response that they are currently compliant with BAT 2.</p> <p>The operator identified that they operate BAT 2n (use high efficiency electric motors</p>  | Confirm future compliance or IC by Inspection. |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>                                  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             |   |                           |  |   | <p>equipped with variable frequency drives, for equipment such as fans)</p> <p>However the Environment Agency did not agree with this position as the operator had only confirmed they utilise one BAT technique and not a combination of techniques as required by the BAT conclusion.</p> <p>As a result of discussions with the Environment Agency the operator confirmed that in addition to BAT 2n they will implement BAT 2l (suitable insulation for high temperature equipment such as steam and hot water pipes.) The operator has confirmed that this will be implemented by the 30<sup>th</sup> June 2020.</p> <p>The Environment Agency is satisfied that the operator will meet the requirements of this BAT Conclusion.</p> |                                     |
| 3           | In order to improve overall environmental performance, BAT is to ensure stable process operation by | 1.3                       | CC   | CC  | The operator has confirmed in their response that they are currently compliant with BAT 3.  | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             | using a process control system together with a combination of the techniques given  |                           |  |   | <p>The operator's response confirms that Royston Lead Limited has a Process control system in the form of ISO9001 Quality Management System, which provides stability for process control.</p> <ul style="list-style-type: none"> <li>• ISO 9001 provides process control for inputs in terms of cleanliness, uniformity and appropriateness for process (BAT 3a)</li> <li>• Thermo couples are fitted to the melting pots with high temperature interlocks which turn the burners off once the high set point is reached. Electronic Process controls (P&amp;ID loops) are used on systems where a process set point needs to be maintained. (BAT 3f)</li> </ul> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> |                                     |
| 4           | In order to reduce channelled dust and metal emissions to air, BAT is to apply a maintenance management system which especially addresses the | 3.1                       | CC   | CC  | The operator has confirmed in their response that they are currently compliant with BAT 4.  | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques   | Compliance Action to implement BATc            |
|-------------|---|---------------------------|--|---|--|--|
|             | performance of dust abatement systems as part of the environmental management system (see BAT 1)  |                           |  |   | <p>The operator's response confirms:</p> <ul style="list-style-type: none"> <li>The Maintenance Management System is included under Process 7.6 (servicing) of the Royston Lead Integrated Management System. This covers the contracts that are in place with Air Technologies for service and maintenance of the extraction and filter systems, including the HEPA filters.</li> </ul> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> |  |
| 5           | In order to prevent or, where this is not practicable, to reduce diffuse emissions to air and water, BAT is to collect diffuse emissions as much as possible nearest to the source and treat them | 3.2                       | CC   | FC  | <p>The operator has confirmed in their response that they are currently compliant with BAT 5 however they have not provided any details to explain how they are compliant.</p> <p>The Environment Agency considers the site to be 'future compliant' with this BAT conclusion. This is determined by the following:</p> <ul style="list-style-type: none"> <li>There are no process water emissions. The external site areas</li> </ul>  | Confirm future compliance or IC by Inspection. |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b> | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|-------------|--|---------------------------|--|---|---|-------------------------------------|
|             |  |                           |  |   | <p>are hardstanding with sealed site drainage. Therefore the site are currently compliant with this aspect of the BAT conclusion.</p> <ul style="list-style-type: none"> <li>• The operator has confirmed in their response to other BAT conclusions (eg BAT9) that they are implementing an improvement proposal. This includes 'staged installation of enclosed hoods over each melting pot will be carried out between 2018 and 2020. Each pot is a unique design and any hood will need to allow raw material additions, dross removal and molten lead removal'. It is the Environment Agency's decision that until these hoods are in place, the operator is not able to collect fugitive emissions as close to source as possible.</li> <li>• It is recognised that all emissions to air from site process that are collected are treated via the site bag plant and HEPA filter. The site are currently compliant with this aspect of the BAT conclusion.</li> </ul> |                                     |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             |   |                           |  |   | The Environment Agency is satisfied that the operator will meet the requirements of this BAT Conclusion by the compliance date (30/06/2020)   |                                     |
| 6           | <p>In order to prevent or, where this is not practicable, to reduce diffuse dust emissions to air, BAT is to set up and implement an action plan on diffuse dust emissions, as part of the environmental management system (see BAT 1), that incorporates both of the following measures:</p> <p>(a) identify the most relevant diffuse dust emission sources (using e.g. EN 15445);</p> <p>(b) define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame.</p> | 3.2                       | NC   | FC  | <p>The operator has confirmed in their response that they are not currently compliant with BAT 6.</p> <p>The operator has committed to produce a written diffuse emissions action plan which is incorporated into the sites EMS by the compliance date. Further to this they have committed that the diffuse emissions action plan will meet the following points:</p> <ul style="list-style-type: none"> <li>• Identify the most relevant diffuse emissions source (using eg. EN15445)</li> <li>• Define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given timeframe.</li> </ul> <p>The Environment Agency is satisfied that the operator will meet the requirements of</p> | None.                               |



| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>   | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques   | Compliance Action to implement BATc |
|-------------|--|---------------------------|--|---|--|-------------------------------------|
|             |  |                           |  |   | this BAT Conclusion before the compliance date of 30 <sup>th</sup> June 2020.  |                                     |
| 7           | In order to prevent diffuse emissions from the storage of raw materials, BAT is to use a combination of the techniques given | 3.2                       | CC   | CC  | <p>The operator has confirmed that they are currently compliant with this BAT conclusion.</p> <p>The operators response confirms:</p> <ul style="list-style-type: none"> <li>• Enclosed buildings for storing raw materials for the lead processes (BAT 7a).</li> <li>• Covered storage for non-dust forming materials raw materials (BAT 7b)</li> <li>• Tank construction materials are resistant to the contained material. (BAT 7h) (eg Red diesel is stored tank is of a standard construction for oil containment with integral tank bunding and secondary bund where any leaks can be immediately viewed.</li> </ul> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>   | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques   | Compliance Action to implement BATc            |
|-------------|--|---------------------------|--|---|--|--|
| 8           | In order to prevent diffuse emissions from the handling and transport of raw materials, BAT is to use a combination of the techniques given  | 3.2                       | CC   | CC  | <p>The operator has confirmed that they are currently compliant with this BAT conclusion.</p> <p>The operators response confirms:</p> <ul style="list-style-type: none"> <li>• Closed drums; drosses are contained within drums, sealed with lids and shrink-wrapped onto pallets. Prior to transport off site for recycling. (BAT 8d)</li> <li>• Minimise transport distances (BAT 8g)</li> <li>• Minimise material transfers between processes (BAT 8q)</li> </ul> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> | None.  |
| 9           | In order to prevent or, where this is not practicable, to reduce diffuse emissions from metal production, BAT is to optimise the efficiency of off-gas collection and treatment by using a combination of the techniques given | 3.2                       | FC   | FC  | <p>The operator has confirmed in their response that they will be compliant with the requirements of BAT 9 by the compliance date of 30/06/2020.</p> <p>The operator's response confirms :</p>   | Confirm future compliance or IC by Inspection. |

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|-------------|---|---------------------------|--|---|--|-------------------------------------|
|             |   |                           |  |   | <ul style="list-style-type: none"> <li>• All re-melting and casting activities take place in buildings. Process emissions are removed from the point of generation by lip-extraction or hood (LEV) systems , leading to bag filter units that are recirculated internally via HEPA filter. (BAT 9i)</li> <li>• Process emissions are removed from the point of generation by lip-extraction and hood (LEV) systems (Lip extraction not compliant with BAT 9e)</li> <li>• Lead is transferred to holding furnace by covered launders. Partial compliance with (BAT 9e)</li> </ul> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> |                                     |
| 10          | BAT is to monitor the stack emissions to air with at least the given frequency 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 | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable. This is because there are no point source emissions from the installation.   | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>   | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques   | Compliance Action to implement BATc |
|-------------|--|---------------------------|--|---|--|-------------------------------------|
|             | provision of data of an equivalent scientific quality  |                           |  |   |  |                                     |
| 11          | In order to reduce mercury emissions to air (other than those that are routed to the sulphuric acid plant) from a pyrometallurgical process, BAT is to use one or both of the techniques given.<br><br>BAT-AEL for Hg                                      | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion and BAT-AEL are not applicable to this installation. This is because they relate to pyrometallurgical processes, which do not occur on this site.   | None.                               |
| 12          | In order to reduce emissions of SO <sub>2</sub> from off-gases with a high SO <sub>2</sub> content and to avoid the generation of waste from the flue-gas cleaning system, BAT is to recover sulphur by producing sulphuric acid or liquid SO <sub>2</sub> | NA                        | NA   | NA  | The operator has confirmed in their response that they do not accept raw materials on to site that contain sulphur.<br><br>As sulphur or sulphur containing raw materials are not being added to the process the Environment Agency has determined that this BAT conclusion is not applicable. | None.                               |
| 13          | In order to prevent NO <sub>x</sub> emissions to air from a pyrometallurgical process, BAT is to use one of the techniques given   | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this installation. This is because it relates to pyrometallurgical processes, which are not undertaken at this site.   | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques   | Compliance Action to implement BATc |
|-------------|---|---------------------------|--|---|--|-------------------------------------|
| 14          | In order to prevent or reduce the generation of waste water, BAT is to use one or a combination of the techniques given   | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site.<br><br>This is because there is no generation of waste water during permitted activities undertaken on this site. | None.                               |
| 15          | In order to prevent the contamination of water and to reduce emissions to water, BAT is to segregate uncontaminated waste water streams from waste water streams requiring treatment  | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site.<br><br>This is because there is no generation of waste water during permitted activities undertaken on this site. | None.                               |
| 16          | BAT is to use ISO 5667 for water sampling and to monitor the emissions to water at the point where the emission leaves the installation at least once per month 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.<br><br>The monitoring frequency may be adapted if the data series clearly | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site.<br><br>This is because there is no generation of waste water during permitted activities undertaken on this site. | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             | demonstrate sufficient stability of the emissions   |                           |  |   |   |                                     |
| 17          | In order to reduce emissions to water, BAT is to treat the leakages from the storage of liquids and the waste water from non-ferrous metals production, including from the washing stage in the Waelz kiln process, and to remove metals and sulphates by using a combination of the techniques given | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site.<br><br>This is because there is no generation of waste water during permitted activities undertaken on this site.  | None.                               |
| 18          | In order to reduce noise emissions, BAT is to use one or a combination of the techniques given  | 3.4                       | CC   | CC  | The operator has confirmed in their response that they are currently compliant with BAT 18.<br><br>The operators have confirmed that in order to reduce noise emissions, all plant processes are contained within buildings (BAT 18b) .<br><br>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion. | None.                               |

| BATc Number                                   | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>   | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|---|--|---------------------------|--|---|---|-------------------------------------|
| 19  | In order to reduce odour emissions, BAT is to use one or a combination of the techniques given   | 3.3                       | NA   | CC  | <p>The operator has confirmed in their response that they are currently compliant with BAT 19.</p> <p>The operator's response confirms that they do not use odorous processes or materials. (BAT 19b)</p> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> | None.                               |
| <b>BAT 90-107: Lead and/or tin production</b> |  |                           |  |   |   |                                     |
| 90  | In order to prevent or reduce diffuse emissions from preparation (such as metering, mixing, blending, crushing, cutting, screening) of primary and secondary materials (excluding batteries), BAT is to use one or a combination of the techniques given | NA                        | NA   | NA  | <p>The Environment Agency has determined that this BAT Conclusion is not applicable to this site as the raw materials do not require preparation.</p> <p>The operator has confirmed that all raw materials arrive on site in a prepared form ready for direct addition into the process.</p>                          | None.                               |
| 91  | In order to prevent or reduce diffuse emissions from material pretreatment (such as drying, dismantling, sintering, briquetting, pelletising and battery crushing, screening and classifying) in   | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as the raw materials do not require preparation.  | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>   | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques   | Compliance Action to implement BATc |
|-------------|--|---------------------------|--|---|--|-------------------------------------|
|             | primary lead and secondary lead and/or tin production, BAT is to use one or both of the techniques given   |                           |  |   | The operator has confirmed that all raw materials arrive on site in a prepared form ready for direct addition into the process.  |                                     |
| 92          | In order to prevent or reduce diffuse emissions from charging, smelting and tapping operations in lead and/or tin production, and from pre-decoppering operations in primary lead production, BAT is to use an appropriate combination of the techniques given | <b>3.1</b><br><b>3.2</b>  | NA   | CC  | <p>The operator does not consider this BAT conclusion is applicable to them as they do not undertake primary production.</p> <p>The Environment Agency recognises that the following aspects of this BAT Conclusion are not applicable due to the site activities:</p> <ul style="list-style-type: none"> <li>• Prevent or reduce diffuse emissions from smelting operations in production.</li> <li>• Prevent or reduce diffuse emissions from pre-decoppering operations in primary lead production.</li> </ul> <p>However, all other aspects of the BAT conclusion do apply to the site:</p> <ul style="list-style-type: none"> <li>• Prevent or reduce diffuse emissions from the charging [the melting pots] in lead production.</li> <li>• Prevent or reduce diffuse emissions from the tapping [or</li> </ul> | None.                               |



| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>   | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc             |
|-------------|--|---------------------------|--|---|---|---|
|             |  |                           |  |   | <p>discharging the melting pots] in lead production.</p> <p>To demonstrate compliance with the above outlined requirements the operator has confirmed that they utilise the following techniques on-site:</p> <ul style="list-style-type: none"> <li>• Maintain the temperature of furnace [melting pot] at the lowest required level (BAT 92h).</li> <li>• Apply a hood at the tapping point, ladles and drossing area with an air extraction system (BAT 92i).</li> </ul> <p>Further to the above the operator has confirmed that they also intend to incorporate BAT 92f (complete hood coverage with an air extraction system) in the future improvement to the site process.</p> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> |   |
| 93          | In order to prevent or reduce diffuse emissions from remelting, refining and casting in primary and secondary lead | <b>3.1</b><br><b>3.2</b>  | FC   | FC  | The operator has confirmed in their response that they are not currently fully compliant with BAT 93.   | Confirm future compliance for IC by Inspection. |

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|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             | and/or tin production, BAT is to use a combination of the techniques given  |                           |  |   | <p>The operator confirms in their response that the melting pots are temperature controlled by thermocouple read-outs on the control panels which are interlocked such that when a high temperature set point is reached, the burners switch off (BAT 93d).</p> <p>In addition to the above the operator has proposed that they will undergo a staged installation of enclosed hoods over each melting pot. This will be undertaken between 2018 and 2020.</p> <p>The Environment Agency is satisfied that the operator will meet the requirements of this BAT Conclusion by the compliance date.</p> |                                     |
| 94          | <p>In order to reduce dust and metal emissions to air from raw material preparation (such as reception, handling, storage, metering, mixing, blending, drying, crushing, cutting and screening) in primary and secondary lead/or and tin production, BAT is to use a bag filter</p> <p>BAT-AEL for Dust</p> | NA                        | NA   | NA  | <p>The Environment Agency has determined that this BAT Conclusion is not applicable to this site as the raw materials do not require preparation.</p> <p>The operator has confirmed that all raw materials arrive on site in a prepared form ready for direct addition into the process.</p>  | None.                               |

| BATc Number | Compliance Issue<br><br>Priority BAT indicated in <b>Bold Text</b>  | Relevant permit condition | Compliance stated by Operator<br><br>NA / CC / FC / NC | Compliance assessment conclusion<br><br>NA / CC / FC / NC | Summary of Permitting Officer assessment against BATc techniques  | Compliance Action to implement BATc |
|-------------|---|---------------------------|--|---|---|-------------------------------------|
| 95          | In order to reduce dust and metal emissions to air from battery preparation (crushing, screening and classifying), BAT is to use a bag filter or a wet scrubber<br><br>BAT-AEL for Dust   | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not process batteries.   | None.                               |
| 96          | In order to reduce dust and metal emissions to air (other than those that are routed to the sulphuric acid or liquid SO <sub>2</sub> plant) from charging, smelting and tapping in primary and secondary lead and/or tin production, BAT is to use a bag filter<br><br>BAT-AELs for Dust and Pb | 3.1<br>3.2                | --   | CC  | <p>The operator did not provide a response to this BAT conclusion within their initial response. However, the Environment Agency has assessed the operators compliance with this BATc against their Regulation 60 response as a whole, in particular the responses to BAT 9 and BAT 93.</p> <p>In their responses to BAT 9 and BAT 93 the operator has confirmed that each melting pot has either hood or lip extraction which lead to the bag plant and HEPA filter.</p> <p>The installation does not have any direct point source emissions to air from site processes and therefore the BAT AELs are not applicable to the site.</p> | None.                               |

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|-------------|--|---------------------------|--|---|---|-------------------------------------|
|             |  |                           |  |   | The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.  |                                     |
| 97          | In order to reduce dust and metal emissions to air from remelting, refining and casting in primary and secondary lead and/or tin production, BAT is to use the techniques given<br><br>BAT-AELs for Dust and Pb                        | NA                        | NA   | NA  | The Environment Agency has determined that this BAT conclusion and BAT AEL is not applicable to this site. This is because the site does not undertake pyrometallurgical or hydrometallurgical processes. | None.                               |
| 98          | In order to reduce emissions of organic compounds to air from the raw material drying and smelting process in secondary lead and/or tin production, BAT is to use one or a combination of the techniques given<br><br>BAT-AEL for TVOC | NA                        | NA   | NA  | The Environment Agency has determined that this BAT conclusion and BAT AEL is not applicable to this site. This is because the site does not undertake raw material drying or smelting.                   | None.                               |
| 99          | In order to reduce PCDD/F emissions to air from the smelting of secondary lead and/or tin raw materials, BAT is to use one or a combination of the techniques given<br><br>BAT-AEL for PCDD/F  | NA                        | NA   | NA  | The Environment Agency has determined that this BAT conclusion and BAT AEL is not applicable to this site. This is because the site does not undertake any smelting activities.                           | None.                               |

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|-------------|--|---------------------------|--|---|---|-------------------------------------|
| 100         | In order to prevent or reduce SO <sub>2</sub> emissions to air (other than those that are routed to the sulphuric acid or liquid SO <sub>2</sub> plant) from charging, smelting and tapping in primary and secondary lead and/or tin production, BAT is to use one or a combination of the techniques given<br><b>BAT-AEL for SO<sub>2</sub></b> | NA                        | NA   | NA  | The operator has confirmed in their response to BAT 12 that their raw materials do not contain sulphur.<br><br>As there is added to the process the Environment Agency consider this BAT AEL not applicable to this sites operations. | None.                               |
| 101         | In order to prevent the contamination of soil and groundwater from battery storage, crushing, screening and classifying operations, BAT is to use an acid-resistant floor surface and a system for the collection of acid spillages  | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not process batteries.   | None.                               |
| 102         | In order to prevent the generation of waste water from the alkaline leaching process, BAT is to reuse the water from the sodium sulphate crystallisation of the alkali salt solution   | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not process batteries.   | None.                               |
| 103         | In order to reduce emissions to water from battery preparation when the acid mist is sent to the waste water treatment plant, BAT is to operate an adequately designed waste water   | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not process batteries.   | None.                               |

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|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             | treatment plant to abate the pollutants contained in this stream  |                           |  |   |   |                                     |
| 104         | In order to reduce the quantities of waste sent for disposal from primary lead production, BAT is to organise operations on site so as to facilitate process residues reuse or, failing that, process residues recycling, including by using one or a combination of the techniques given | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not undertake primary lead production. | None.                               |
| 105         | In order to allow the recovery of the polypropylene and polyethylene content of the lead battery, BAT is to separate it from the batteries prior to smelting  | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not process batteries.                 | None.                               |
| 106         | In order to reuse or recover the sulphuric acid collected from the battery recovery process, BAT is to organise operations on site so as to facilitate its internal or external reuse or recycling, including one or a combination of the techniques given                                | NA                        | NA   | NA  | The Environment Agency has determined that this BAT Conclusion is not applicable to this site as they do not process batteries.                 | None.                               |
| 107         | In order to reduce the quantities of waste sent for disposal from secondary lead and/or tin production, BAT is to organise operations on site so as to  | 1.4                       | CC   | CC  | The operator has confirmed in their response that they are currently compliant with BAT 107.  | None.                               |

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|-------------|---|---------------------------|--|---|---|-------------------------------------|
|             | facilitate process residues reuse or, failing that, process residues recycling, including by using one or a combination of the techniques given |                           |  |   | <p>The operator's response confirms that Royston Lead Limited recycle all lead bearing waste materials. This either achieved on site (clean lead off-cuts) or is sent to a sister company (melt-dross or swarf). (BAT 107a, 107b)</p> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.</p> |                                     |