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/GP3639ZY
The Operator is: AMG Aluminum UK Limited
The Installation is: AMG Aluminum UK Limited
This Variation Notice number is: EPR/GP3639ZY/V002

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 30th 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 13th 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 is 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 16th 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 30th June 2020, which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 30th 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 28th March 2017.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review

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. For the majority of the BAT Conclusions the operator has demonstrated that they currently operate in compliance with the requirements of the BAT Conclusions other than for those techniques and requirements described in BAT Conclusion 10, 81 and 82. In relation to these BAT Conclusions, we agree with the operator in respect to their current stated capability as recorded in their Regulation 60 Notice response and understand that they will be compliant before 30th June 2020 (the "compliance date"). We have therefore included Improvement Conditions IC02 and IC03 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusion are delivered before 30th 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 23rd January 2018. 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 05/03/18, received 23/03/2018, regarding BAT 81, BAT 83, BAT 84, emissions and emission points.
- Response to our email dated 05/03/18, received 26/03/2018, regarding updated layout plans showing an amended permit boundary, effluent drainage and air emission points.
- Response to our email dated 10/04/18, received 18/04/18 providing further information in regards to operators compliance with BAT 14, BAT 19, BAT 75, BAT 78, BAT 81, BAT 84 and emissions.
- Response to our email dated 10/04/18, received 03/05/18 providing amended updated site drainage plans.

We made a copy of this information available to the public in the same way as the responses to our information requests.

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[1] (priority hazardous substances, priority substances and "other pollutants"). It also applies to the specific pollutants listed in the 2015 Directions[2], 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.

[1] Environmental Quality Standards Directive (EQSD) (2008/105/EC, as amended by 2013/39/EU)
[2] The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015

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.

Our intention was to use the non-ferrous metals permit review to regulate any discharge of hazardous pollutants to surface waters from this installation using the “liable to cause pollution” approach. However the operator has not provided satisfactory responses to questions 5 and 6 on our Regulation 60 Notice to enable us to undertake this aspect of the review within the agreed project timeline. We have therefore carried over this requirement into the Consolidated Variation Notice.

We have included Improvement Condition IC1 requiring the operator to submit a surface water pollution risk assessment in accordance with our guidance using representative emissions data.

The operator will be required to submit their risk assessment within 12 months of the effective date of our notice.

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 that their original site condition report prepared by Carl Bro Group Ltd, dated July 2002 (Report ref. 73.1454.01) remains accurate. Therefore no further assessment was undertaken.

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 (ELVs) 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 have been incorporated into the Consolidated Variation Notice via two tables in Schedule 3 – Emissions and monitoring, as follows:

Emissions to air

- Table S3.1a, the requirements of which are effective from the date of issue of the notice, and which contains the existing ELVs and monitoring requirements; and

- Table S3.1b, the requirements of which will take effect from 30th June 2020, and which contains amended ELVs where a BAT-AEL is specified in the BAT Conclusions, and any associated updated monitoring requirements.

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 30th 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** **NA / CC / FC / NC**	**Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement** **Type of process: SECONDARY ALUMINIUM PRODUCTION**
BAT Conclusions that are not applicable to this installation	**NA**	**General BAT Conclusions for Non-Ferrous Metals Industries: 6, 11, 12, 13, 15, 16, and 17** BAT Conclusions for copper production: 20-54 inclusive BAT Conclusions for alumina production: 55-57 inclusive BAT Conclusions for anode production: 58-63 inclusive BAT Conclusions for primary aluminium production: 64-73 inclusive **BAT Conclusions for secondary aluminium production: 74, 76, 77, 79, 80, 83, and 86** BAT Conclusions for salt slag recycling process: 87-89 inclusive BAT Conclusions for lead and/or tin production: 90-107 inclusive BAT Conclusions for primary zinc production: 108-120 inclusive BAT Conclusions for secondary zinc production, 121-130 inclusive BAT Conclusions for cadmium production: 131-133 inclusive BAT Conclusions for precious metals production: 134-149 inclusive BAT Conclusions for ferro-alloys production: 150-162 inclusive BAT Conclusions for nickel and/or cobalt production: 163-176 inclusive BAT Conclusions for carbon and/or graphite production: 177-184 inclusive

Table 1: Decision checklist for relevant BAT Conclusions		
Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries	**Status** **NA / CC / FC / NC**	**Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement** **Type of process: SECONDARY ALUMINIUM PRODUCTION**
BAT Conclusions where we accept the operator's Reg 60 notice response that they are currently compliant and no further explanation is required.	**CC**	**General BAT Conclusions for Non-Ferrous Metals Industries: 1-5, 7-9, 14, 18, and 19** **BAT Conclusions for secondary aluminium production: 75, 78, 81-82, 84, and 85**
BAT Conclusions where improvements will be undertaken on site within the 4 year period in order to achieve compliance with the narrative and/or BAT-AEL prior to the 4 year deadline	**FC**	**General BAT Conclusions for Non-Ferrous Metals Industries: 10, 81, and 82** **BAT Conclusions for secondary aluminium production: None**
BAT Conclusions where the Operator has responded that they are not compliant and have not submitted any plans to become compliant	**NC**	**General BAT Conclusions for Non-Ferrous Metals Industries: None** **BAT Conclusions for secondary aluminium production: None**

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.

BAT-AELs and monitoring requirements for secondary aluminium production

BAT Conclusion 10

BAT 10 sets out the minimum monitoring requirements for the NFM sector, stating that BAT is to monitor stack emissions to air with at least the frequency given and in accordance with EN standards. Furthermore, it says that 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. A potential issue is that BAT 10 specifies that continuous or periodic monitoring is BAT for a number of parameters, but this is then qualified by footnote (1) to the monitoring table, which states:

"For sources of high emissions, BAT is continuous measurement or, where continuous measurement is not applicable, more frequent periodic monitoring."

'High emissions' are not defined in the BAT Conclusions / BREF, however the implication is that this term links to higher environmental impacts / risk. Continuous monitoring is typically used for controlling higher environmental risks, when the feedback from such monitoring is required for process controls (e.g. abatement, such as de-NO_x and acid-gas scrubbing) and where the absence of such monitoring could result in a lack of sufficient control and significant impacts; or when periodic monitoring does not give sufficiently representative results.

Our view is that rather than referring to 'high emissions', we will consider what levels of emissions can BAT for abatement and process controls achieve, and having determined that, we will consider the following questions:

- Can periodic monitoring provide representative results?
- Can the installation keep within the ELVs under normal conditions without the need for process controls through continuous monitoring?
- Are there surrogate parameters available that can be used to reliably infer the emissions and at an acceptable level of uncertainty, in case there is a breakdown in the abatement equipment, or under abnormal operations?

If the answer is ‘yes’ to all of the above three questions, our view is that periodic monitoring could be deemed to provide a sufficient level of control and demonstration of compliance. However, if the answer is ‘no’ to one or more of the above questions - especially the first and second question, then we would consider continuous or more frequent periodic monitoring to be more appropriate for the site.

Monitoring requirements can also be influenced by environmental risk, for example, if the risks were very low, we could opt for a combination of surrogate parameters and/or more frequent periodic monitoring, rather than continuous monitoring. We will also take this into consideration when making our judgement.

We have been unable to fully consider the implications for the operator as part of this review and will require the operator to provide further information to enable us to determine with respect to monitoring frequency, what is BAT for the site, and therefore to agree the appropriate monitoring provision to be applied at the site from 30th June 2020. Our pragmatic approach to the monitoring aspects of the permit review is therefore:

1. To ensure that the existing permit has been updated to reflect current monitoring standards, in accordance with our M2 monitoring guidance. These standards are contained within Table S3.1a.

2. The inclusion of an improvement condition (IC03) in the permit requiring that the operator provides evidence to justify the level of monitoring to be employed, including where relevant, the frequency of periodic monitoring. That evidence will allow us to address the questions above, and facilitate agreement of the appropriate monitoring provision that will apply from 30th June 2020 onwards.

3. To carry over the existing periodic monitoring requirements in Table S3.1b pending completion of IC03, which must be submitted to the Environment Agency within 6 months of the date of issue of this variation.

BAT Conclusions 81

We have amended the existing ELV for particulate matter of 10 mg/Nm^3 to 5 mg/Nm^3 in line with the requirements of the BAT Conclusion and BATAEL. The new BAT-AEL is applicable to emissions from the charging, melting, tapping and molten metal treatment in secondary aluminium production and therefore the ELVs for emission points A4, A8, and A15 (Table S3.1b) have been updated within the permit.

We have added an ELV for particulate matter of 5 mg/Nm^3 in line with the requirements of the BAT Conclusion and BATAEL. The new BAT-AEL is applicable to emissions from the charging, melting, tapping and molten metal treatment in secondary aluminium production and therefore the ELV for emission point A2 (Table S3.1b) has been updated within the permit.

BAT Conclusion 82

We have amended the existing ELV for particulate matter of 10 mg/Nm^3 to 5 mg/Nm^3 in line with the requirements of the BAT Conclusion and BATAEL. The new BAT-AEL is applicable to emissions from remelting in secondary aluminium production and therefore the ELVs for emission points A4, A8, and A15 (Table S3.1b) have been updated within the permit.

We have added an ELV for particulate matter of 5 mg/Nm^3 in line with the requirements of the BAT Conclusion and BATAEL. The new BAT-AEL is applicable to emissions from remelting in secondary aluminium production and therefore the ELV for emission point A2 (Table S3.1b) has been updated within the permit.

BAT Conclusion 84

We have retained the current ELV for hydrogen fluoride (HF) which is 1 mg/Nm^3 at emission point A4 as this is already in accordance with the respective BAT-AEL. This BAT conclusion is applicable to emissions from the melting furnace, remelting, and furnaces undertaking molten metal treatment.

The operator has confirmed that there are no additions to the process which could give rise to HF at emission points A2, A8, and A15 and HCl at emission points A2, A4, A8, and A15. Therefore we have not imposed the associated BAT-AELs for these substances at these emission points.

The operator has confirmed that the flux used in the melting furnaces has the potential to give raise to Cl_2 where the temperature is raised in excess of 900˚C. The operator has confirmed that the melting furnaces are limited to 700-800˚C because the aluminium degrades at higher temperatures. This is ensured by thermocouples and manual checks (recorded). As a result we have confirmed that the process controls in place ensure that Cl_2 is not emitted and monitoring is not required for Cl_2 at emission point A2. No fluxing occurs at emission points A4, A8 and A15 so there is no source of Cl_2 emission at these process stages.

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. ‘

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-AELs 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.

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
IC1	The operator shall submit a surface water pollution risk assessment to the Environment Agency for approval, which shall assess the impact of discharges of hazardous pollutants to surface water **and/or sewer** from the installation. The risk assessment shall include, but not be limited to the following: • representative emissions data for the following hazardous pollutants: silver, arsenic, cadmium, cobalt, chromium (total), chromium (VI), copper, mercury, nickel, lead, zinc; and any other relevant substances discharged from the installation. Any emissions monitoring required should be carried out using the methods and standards described in Environment Agency M18 guidance; and • a risk assessment carried out in accordance with the screening procedures in Environment Agency guidance "Surface water pollution risk assessment for your environmental permit", using the representative emissions data obtained in (a) above.	Within 12 months of effective date of notice V002
IC2	The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the BAT-AELs where BAT is currently not achieved, but will be achieved before 30th June 2020. The report shall include, but not be limited to, the following: 1) Current performance against the BAT-AEL. 2) Methodology for reaching the BAT-AELs. 3) Associated targets / timelines for reaching compliance by 30th June 2020. 4) Any alterations to the initial plan. The report shall address the following BAT Conclusions: **BAT 81,** (compliance with BAT-AELs for particulate matter from the melting furnace). **BAT 82,** (compliance with BAT-AELs for particulate matter from the melting furnace).	Interim progress report by 30th June 2019 Final report by 31st March 2020

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
	Refer to BAT Conclusions and Table 3.1b for a full description of the BAT requirements.	
IC3	The operator shall undertake a review of periodic monitoring for emissions to air of particulate matter from emission points A2, A4, A8 and A15. The review will be made with reference to BAT 10 of the BAT Conclusions for the Non-Ferrous Metals Industries (Commission Implementing Decision EU2016/1032) and shall justify, with appropriate evidence, the frequency of monitoring to be employed at the installation from 30th June 2020. The evidence required under this condition shall include analysis and interpretation of monitoring results for each substance, and performance against the relevant BAT-AEL. Consideration should be given to *inter alia* the nature of the raw materials, fluxing agents, refining chemicals used; operational stability; and process monitoring associated with operation of abatement plant. The quantity of monitoring data considered must be justified and be sufficient so as to demonstrate that the results are statistically representative of emissions during normal operations, covering the concentration range and mass emission rate of substances emitted at all stages of the process. A report on the above review shall be submitted to the Environment Agency to facilitate agreement in writing of the appropriate monitoring provision at the installation.	Interim progress report by 30th June 2019 Final report by 31st March 2020

Annex 4

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

Removal of A1 Emission Point.

Table 6.1.1 Emission points into the air, of the existing permit, has 15 emission points A1-A15. During the NFM permit review the operator informed the Environment Agency that the 5 Tonne Mono Furnace had been removed from site. The associated emission point (A1) has therefore been removed from Tables S3.1a and S3.1b in the consolidated variation notice.

Removal of Calcium Silicon Process and Titanium Burning DAA

The introductory note for the original permit BQ3916IQ/A001 (London Scandinavian Metallurgical Co Limited) describes a calcium silicon alloy process which involved the drying and melting of aluminium and steel punchings and the addition of solid metals to create alloys. The operator confirmed during a site meeting on the 30th January 2018, that this process has not been undertaken for a significant amount of time and no ferrous activity occurs in the Electric Melting Department (AMG Aluminium UK Limited). The Environment Agency have removed this process description from the introductory note of the new consolidated permit. No further updates to the permit were necessary as the calcium silicon process was not explicitly mentioned anywhere else in the permit.

During the determination the operator also confirmed to the Environment Agency that the Titanium Burning DAA has not been used for a significant proportion of time and that the current business direction suggests that it will not be used again. In addition this activity is actually covered by a Local Authority Permit and is not a DAA to any of the main activity on this permit. The Environment Agency have removed this from Table S1.1 of the new consolidated permit.

Annex 5

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

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	Relevant permit condition	Compliance stated by Operator NA / CC / FC / NC	Compliance assessment conclusion NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	BAT 1-19: General requirements					
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	The operator has confirmed in their response that they are currently compliant with BAT 1. The site operates a well-established EMS compliant with ISO 14001 which is externally checked by a third party. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None.
2	In order to use energy efficiently, BAT is to use a combination of the techniques given.	1.2	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 2. The operator has made the following comments: : • BAT 2a: The site operates to an Energy Efficiency Management System and have applied for registration to ISO 50001.	None.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	Relevant permit condition	Compliance stated by Operator NA / CC / FC / NC	Compliance assessment conclusion NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					• BAT 2e,g,i: Feed ingots are dried using waste heat from the melting units. *The Environment Agency considers this to meet BAT 2i only. As this BAT 2e, g are aimed at pre-heating raw materials The site process and BAT 2i are in relation to raw material drying.* The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion. Further to the above, the operator also mentions that BAT 2n, which requires the use of high efficiency electric motors, is under consideration as part of their energy reduction process.	
3	In order to improve overall environmental performance, BAT is to ensure stable process operation by using a process control system together with a combination of the techniques given.	1.1	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 3. The operator has confirmed that they are compliant with the following BAT 3 techniques:	None.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	Relevant permit condition	Compliance stated by Operator NA / CC / FC / NC	Compliance assessment conclusion NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					• BAT 3a and BAT 3b: All input materials are purchased based upon their quality as the production process has no ability to correct mistakes. • BAT 3c: All weighing and quality critical measuring and feed equipment is calibrated externally or part of the planned maintenance system. • BAT 3d, BAT 3e, and BAT 3j: There are numerous procedures for process control, and furnace temperature. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
4	In order to reduce channelled dust and metal emissions to air, BAT is to apply a maintenance management system which especially addresses the performance of dust abatement systems as part of the environmental management system (see BAT 1).	3.1	CC	CC	The operator has confirmed in their response that they are compliant with BAT 4. The site operates a planned Preventative Maintenance Schedule which incorporates all abatement equipment.	None.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	Relevant permit condition	Compliance stated by Operator NA / CC / FC / NC	Compliance assessment conclusion NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					In addition, the site also operate continuous monitoring on the stack emissions along with periodic tests and visual inspections. Monitoring equipment is alarmed if limits are exceeded. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	CC	The operator has confirmed in their response that they are compliant with BAT 5. Abatement equipment covers the majority of emission generating processes where physically and technically possible. This covers the raw material weighing and mixing, melting, holding and refining, alloying and casting. In addition the operator's response to BAT 7 demonstrates how they store materials to remove the risk of diffuse emissions to air and water. • All raw materials are stored internally. Except solid aluminium	None.

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					ingots which on occasion are stored externally. (BAT 7a, b) • Tank construction materials are resistant to the contained materials. This is applicable for both lime and waste oils. (BAT 7h) • Waste oil storage has a leak detection system (with oil level display and alarm). (BAT 7i) • Waste oils are stored in a double skinned tank, inside a bund with 110% capacity. (BAT 7j) • Storage areas are regularly cleaned. Cleaning with water prohibited due to explosion risk. (BAT 7n). All of the above techniques were witnessed/observed during an Environment Agency site visit (30th January 2018). All site surface water drainage is discharged from site without treatment to the River Rother. It is felt the above best practise techniques demonstrate the operator manages raw materials in a manner to reduce the risk of diffuse	

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					emissions and therefore treatment of surface water discharge is not needed. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
6	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: (a) identify the most relevant diffuse dust emission sources (using e.g. EN 15445); (b) define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame.	NA	NA	NA	The Environment Agency has determined that this BAT conclusion is not applicable for this site. The site has not had a history of diffuse emission problems and the abatement equipment covers the majority of emission generating processes (as per the response to BAT 7).	None.
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	The operator has confirmed in their response that they are compliant with BAT 7.	None.

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					The operator has confirmed that they are compliant with the following BAT techniques: • BAT 7a: All raw materials are stored internally. Apart from pure metal ingots which are sometimes stored externally. • BAT 7b: Covered storage for non-dust forming materials such as concentrates, fluxes, fuels and bulk materials. The operator also confirms this is undertaken to manage the risk of explosion. • BAT 7f: dust/gas extraction devices are operational at the transfer and tipping points for the inorganic salts • BAT 7h:Tank construction materials are resistant to the contained materials. This is applicable for both lime and waste oils. • BAT 7i: Waste oil storage has a leak detection system (with oil level display and alarm). • BAT 7k: waste oils are stored in a double skinned tank, inside a bund with 110% capacity. • BAT 7n: Storage areas are regularly cleaned. Cleaning with	

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					water prohibited due to explosion risk. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	The operator has confirmed in their response that they are compliant with BAT 8. The operator has confirmed that they are compliant with the following BAT techniques: • BAT 8b: Covered conveyors to handle dust forming solids (limited to the warehouse). • BAT 8o: Planned road sweeping campaigns are undertaken. Cleaning with water prohibited due to explosion risk. • BAT 8q: minimise material transfers between processes. During the site visit 30th January 2018 the operator expanded on their explanation for BAT 2q. The operator confirmed that all	None.

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					material is stored in the main warehouse until moved down to the process building for use that day. The material is stored alongside the processes where they are used this minimises the number of movements and the distance. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	CC	CC	The operator has confirmed in their response that they are compliant with BAT 9. The operator has confirmed that they are compliant with the following BAT techniques: • BAT 9c: all furnaces have purpose designed extraction systems to capture melting fume. • BAT 9i: Treat the collected emissions in an adequate abatement system (filter plants).	None.

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					The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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 provision of data of an equivalent scientific quality.	3.1	CC	FC	The operator has confirmed in their response that they are compliant with BAT 10. The operator has confirmed they will monitor in accordance with the monitoring standards specified by BAT 10. The Environment Agency requires further information from the operator in order to determine the appropriate level of monitoring provision to be employed at the site from 30th June 2020. We have included Improvement Condition IC03 in order to obtain this information and to subsequently agree with the operator the BAT requirements for the site. We describe this aspect of our review in more detail within the Key Issues section of this decision document.	Confirm future compliance via IC05.

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					The Environment Agency is unable to agree that the operator is currently compliant with the monitoring requirements of BAT 10, but we are satisfied that pending completion of IC03, the operator will be compliant by 30th June 2020.	
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. BAT-AEL for Hg.	N/A	N/A	N/A	The operator has confirmed that BAT 11 is not applicable as there is no mercury within the raw materials. The Environment Agency has determined that this BAT conclusion is not applicable to this site.	None.
12	In order to reduce emissions of SO_2 from off-gases with a high SO_2 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_2.	N/A	N/A	N/A	This BAT Conclusion is not applicable to plants producing secondary aluminium, as confirmed by the applicability section within BAT 12.	None.
13	In order to prevent NO_x emissions to air from a pyrometallurgical process, BAT is to use one of the techniques given.	N/A	N/A	N/A	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 typically only undertaken during primary metal production, and therefore are not	None.

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					applicable to the production of secondary aluminium.	
14	In order to prevent or reduce the generation of waste water, BAT is to use one or a combination of the techniques given.	TBC	CC	CC	The operator has confirmed in their response that they are complaint with BAT 14. In their response the operator has confirmed that they operate both closed (caster) and open cooling systems in the process. This is compliant with BAT 14f of the NFM Bat conclusions. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	It is recognised that the operator may be able to do more with regard to the reduction of waste water and it is suggested that this is investigated during on-going compliance (4 yearly auditing).
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 for this installation as there is no on-site treatment of wastewater.	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	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion is not generally applicable for installations which only discharge wastewater to sewer.	None.

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	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. The monitoring frequency may be adapted if the data series clearly demonstrate sufficient stability of the emissions.				We do not require operators to routinely monitor discharges of wastewater to sewer where the discharge is already regulated (and monitored) by the sewerage undertaker via a trade effluent consent, unless there is a site-specific environmental need for additional monitoring, e.g. if there was a ELV on the environmental permit to protect water quality, in which case we would require monitoring to be undertaken in accordance with BAT 16. The only water that is discharged directly into the River Rother is uncontaminated surface water. The above position is consistent with how we regulate other industrial sectors through the permitting process.	
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 for installations which only discharge wastewater to sewer. The BAT-AELs for BAT 17 relate to direct emissions to receiving waters (as opposed to indirect emissions made via the foul sewer) and in any case do not apply to the	None.

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					production of secondary aluminium, as confirmed in the BAT Conclusion. It is our view that the intention of BAT 17 is to ensure that surface waters are appropriately protected, through the prevention of direct discharges which may otherwise have been made without (or with minimal) treatment.	
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 compliant with BAT 18. In their response the operator states that the site operates ' low noise processes' and that 'external noise testing has been undertaken in the past which revealed no issues.' Although indicating that noise emission may be minimal this did not provide enough detail for us determine which techniques they are compliant with. During an Environment Agency site visit (30th January 2018) it was observed that all noisy equipment and site process are undertaken inside the process building. The only exceptions are bag filter plants (which	None.

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					can be a source of noise), which are located externally. Based on the operator's response, and historical evidence that noise emissions have not been an issue on site we deem that the site is operating to BAT. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
19	In order to reduce odour emissions, BAT is to use one or a combination of the techniques given.	3.3	CC	CC	The operator has confirmed in their response that they are compliant with BAT 19. In their response the operator stated 'no odour issues related to the process and no history of odour complaints' Whilst indicating that odour emissions may be minimal this did not provide enough detail for us to determine which techniques they are compliant with. During an Environment Agency site visit (30th January 2018) it was observed that all	None.

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					materials are stored appropriately in an internal warehouse / storage area and that the site uses minimal odorous substances. There is potential that 'dross/skim' taken from the ladles could be a source of odour emissions but this is appropriately handled by being kept dry, inside the building before being picked up for disposal. This was also confirmed by the operator via email following the site visit. (dated – 18/04/2018). The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
	BAT 74-86: Secondary aluminium production					
74	In order to increase the raw materials' yield, BAT is to separate non-metallic constituents and metals other than aluminium by using one or a combination of the techniques given depending on the constituents of the treated materials.	N/A	N/A	N/A	The operator has confirmed in their response that this BAT conclusion is not applicable. The raw materials used on site are not secondary and are therefore not contaminated with non-metallic constituents.	None.

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75	In order to use energy efficiently, BAT is to use one or a combination of the techniques given.	1.1	CC	CC	In their response the operator has not demonstrated that they work to any of the example narrative BAT techniques listed under BAT 75. However, the Environment Agency considers that the operations on site are compliant with headline objective of BAT 75. The operator has confirmed they use waste heat from the melting units to dry the aluminium ingots prior to the ingots being fed into the melting units. This drying action must occur for safety reasons. The Environment Agency consider this to be an energy efficiency measure in line with the headline objective of the BAT conclusion, as it reduces the need for the operator to draw energy from the other sources to produce heat for the drying process. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None.

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76	In order to prevent or reduce emissions to air, BAT is to remove oil and organic compounds from the swarf before the smelting stage using centrifugation and/or drying.	N/A	N/A	N/A	The operator has confirmed in their response that this BAT conclusion is not applicable. No oil is present in the swarf at AMG Aluminum.	None.
77	In order to prevent or reduce diffuse emissions from the pretreatment of scraps, BAT is to use one or both of the techniques given.	N/A	N/A	N/A	The operator has confirmed in their response that this BAT conclusion is not applicable. There is no pre-treatment of scraps at AMG Aluminum.	None.
78	In order to prevent or reduce diffuse emissions from the charging and discharging/tapping of melting furnaces, BAT is to use one or a combination of the techniques given.	3.2	CC	CC	The operator has confirmed in their response to the BAT conclusions that they are compliant with BAT 78. The operator has confirmed that they are compliant with the following BAT Technique: • BAT 78c: The melting furnaces, the Mecatherm and the 10 Tonne Mono both have sealed doors. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None.

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79	In order to reduce emissions from skimmings/dross treatment, 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. This is because the operator has confirmed with in their response that they do not treat dross or skimmings.	None.
80	In order to reduce dust and metal emissions from the swarf drying and the removal of oil and organic compounds from the swarf, from the crushing, milling and dry separation of non-metallic constituents and metals other than aluminium, and from the storage, handling and transport in secondary aluminium production, BAT is to use a bag filter. BAT-AEL for Dust.	NA	NA	NA	The operator has confirmed in their response that this BAT conclusion in not applicable because they do not undertake the removal of oil and organic compounds from swarf, crushing, milling and dry separation of non-metallic compounds other than aluminium in the storage, handling, and transport processes in onsite.	None.
81	In order to reduce dust and metal emissions to air from furnace processes such as charging, melting, tapping and molten metal treatment in secondary aluminium production, BAT is to use a bag filter. BAT-AEL for Dust.	3.1	CC	FC	The operator has confirmed that they are compliant with BAT 81. They have confirmed in their response that all emissions from the furnace processes such as charging, melting, tapping and molten metal treatment are treated using a bag filter.	None.

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					The operator has also confirmed that they meet the BAT-AEL of 5mg/Nm^3 The relevant emission points are: A2, A4, A8, and A15. Monitoring Particulate Matter at emission point A2 is a new requirement and the operators have not routinely monitored this stack. Therefore Improvement Condition 2 (IC02) has been added to the permit to ensure that the operator monitors their current performance against the BAT – AEL. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
82	In order to reduce dust and metal emissions to air from remelting in secondary aluminium production, BAT is to use one or a combination of the techniques given. BAT-AEL for Dust.	3.1	CC	FC	The operator has confirmed that they are compliant with BAT 82. They have confirmed in their response that they are compliant with following BAT techniques:	None.

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					• BAT 82a: the use of uncontaminated materials. • BAT 82b: optimise the combustion conditions to reduce the emission of dust. • BAT 82c: bag filters used on site to treat emissions from remelting in secondary aluminium production. • The operator has also confirmed that they meet the BAT-AEL of 5mg/Nm^3 The relevant emission points are: A2, A4, A8, and A15. Monitoring Particulate Matter at emission point A2 is a new requirement and the operators have not routinely monitored this stack. Therefore Improvement Condition 2 (IC02) has been added to the permit to ensure that the operator monitors their current performance against the BAT – AEL. The Environment Agency is satisfied that following the completion of IC3 the operator	

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					will satisfy the requirements of this BAT Conclusion.	
83	In order to reduce emissions to air of organic compounds and PCDD/F from the thermal treatment of contaminated secondary raw materials (e.g. swarf) and from the melting furnace, BAT is to use a bag filter in combination with at least one of the techniques given. BAT-AELs for TVOC and PCDD/F.	NA	NA	NA	The operator has stated in their response that they do not consider this BAT conclusion or the associated BAT–AELs applicable to their site. The operator has explained that this is because of the raw materials (commercial grade aluminium, free from organic contamination) they use in the process. The Environment Agency agrees with the operator that this BAT conclusion and BAT-AEL is not applicable to this site. We accept the operator's justification that PCDD/F and VOC emissions cannot be generated if organic contamination is not present. With this in mind we have added a specification to Table S2.1 to ensure that the raw materials remain commercial grade and therefore free from organic contamination.	None.
84	In order to reduce emissions to air of HCl, Cl_2 and HF from the thermal treatment of contaminated secondary raw materials (e.g. swarf), the melting	**3.1**	CC	CC	The operator has confirmed in their response that they are compliant with BAT 84.	None.

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	furnace, and remelting and molten metal treatment, BAT is to use one or a combination of the techniques given BAT-AELs for HCl, Cl_2 and HF.				The scope of the BAT 84 states that the monitoring of HCl, HF and Cl_2 is required where the following activities take place: • Thermal treatment of contaminated secondary materials • Melting furnaces • Remelting • Molten metal treatment. The operator uses pure aluminium ingot as their main raw material. With this in mind we have not included the 'thermal treatment of contaminated secondary materials' within the scope of our assessment. The operator has confirmed the sources of emissions at each of the following emission points: • A2 – Melting furnaces and fluxing. • A4 – Treatment of aluminium with potassium fluoride salts (boron and titanium). • A8 – Alloying. • A15 – Potential alloying where the metal is slightly off specification.	

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					Finally, in regards to the substances themselves the operator has confirmed within their response that: • HCl – No activities undertaken or additions made that can give rise to HCl • HF – HF is only emitted as a result of the use of potassium fluoride salts (boron or titanium). • Cl_2 – The flux used in the melting furnaces can only give rise to Cl_2 emission if the metal temperature is raised in excess of 900˚C. The operator has confirmed that the melting furnaces are limited to 700-800˚C because aluminium degrades at higher temperatures. This is ensured by thermocouples and manual checks. As a result of this we have determined that HCl, and Cl_2 do not need to be monitored. We accept the operator's justification that there are no additions to the furnaces that can give rise to relevant emissions at the working temperatures of the process.	

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					HF will continue to be monitored in line with the BAT conclusion and BAT-AEL (1 mg/Nm^3) for emission point A4. This is due to metal treatment with potassium fluoride salts. . HF monitoring is not required for emission points A2, A8 or A15 because these furnaces do not involve treatment with fluoride salts. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
85	In order to reduce the quantities of waste sent for disposal from secondary aluminium 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.	1.4	CC	CC	The operator has confirmed in their response that they are compliant with BAT 85. The operator has confirmed that all aluminium drosses produced during the process are managed on site in a manner that allows a third party to recycle and recover residues from the skimmings and dross.	None.

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					The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
86	In order to reduce the quantities of salt slag produced from secondary aluminium production, BAT is to use one or a combination of the techniques given.	NA	NA	NA	The operator have confirmed in their response that no salt slag is formed during their process. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None.