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/RP3233CZ
The Operator is: Less Common Metals Limited
The Installation is: Unit 2 Hooton Park
This Variation Notice number is: EPR/ RP3233CZ/V004

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 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 28/03/17.

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 have no reason to consider that the operator will not be able to comply with the techniques and standards described in the BAT Conclusions.

2.3 Requests for Further Information during determination

No further information requests were made during determination.

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).

[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

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.

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 therefore 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.

Based on the written submissions provided in the operators original application and response to our Regulation 60 Notice the operator has

confirmed that they do not use, produce or release any relevant hazardous substances. No further action was considered necessary.

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 30th June 2020; and

- any associated updated monitoring requirements that will take effect from 30th 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 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: FERRO ALLOY PRODUCTION** **NICKEL AND/OR COBALT PRODUCTION** **OTHER NON FERROUS METALS**
BAT Conclusions that are not applicable to this installation	**NA**	**General BAT Conclusions for Non-Ferrous Metals Industries: 11, 12, 13** 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: 74-86 inclusive 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, 151, 152, 156, 157, 158, 159, 160** **BAT Conclusions for nickel and/or cobalt production: 163, 164, 167, 168, 169, 170, 171, 172, 173, 174, 175** 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: FERRO ALLOY PRODUCTION** **NICKEL AND/OR COBALT PRODUCTION** **OTHER NON FERROUS METALS**
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, 2, 3, 4, 5, 7, 8, 9, 14, 15, 16, 17, 18, 19** **BAT Conclusions for ferro-alloys production: 153, 154, 155, 161, 162** **BAT Conclusions for nickel and/or cobalt production: 165, 166, 176**
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	**FC**	None
BAT Conclusions where the Operator has responded that they are not compliant and have not submitted any plans to become compliant	**NC**	None

Key Issues

i) Applying BAT to Part B processes

These BAT Conclusions for Non-ferrous Metals concern certain activities specified in Sections 2.1, 2.5 and 6.8 of Annex I to Directive 2010/75/EU, namely:

— **2.1**: Metal ore (including sulphide ore) roasting or sintering;
— **2.5**: Processing of non-ferrous metals:
(a) production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes;
(b) melting, including the alloyage, of non-ferrous metals, including recovered products and operation of non-ferrous metal foundries, with a melting capacity exceeding 4 tonnes per day for lead and cadmium or 20 tonnes per day for all other metals;
— **6.8**: Production of carbon (hard-burnt coal) or electrographite by means of incineration or graphitisation.

This translates across to the following activities from the Environmental Permitting Regulations 2016:

- Section 2.1 Part A(1)(a) - roasting or sintering metal ore, including sulphide ore, or any mixture of iron ore with or without other materials.

- Section 2.2 Part A(1)(a) - producing non-ferrous metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic activities.

- Section 2.2 Part A(1)(b) - Melting, including making alloys of, non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where — (i) the plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals.

This means that the Section 2.2 Part B activities at the installation are not directly covered by the BAT Conclusions. However, we would usually use the Local Authority Process Guidance Notes (PGNs) to determine the appropriate techniques for Part B processes at the facility. Where there is no domestic guidance available, such as PGNs, operators and regulators should refer directly to the relevant BREFs. In this case, there aren't suitable PGNs available for this installation so we have used the BAT Conclusions as a basis for our decision making on the appropriate techniques for the facility.

ii) Operating techniques

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 Notice response as specific

operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

iii) BAT Conclusions

BAT Conclusion 10 in relation to BAT 154 and 155 (ferro-alloy production)

We have retained the current limit for Particulate Matter of 5 mg/m^3 as this is already in accordance with the BAT-AEL. This BAT-AEL applies to ferro-alloy production, therefore to emission points A3 and A4 only. The BATc suggests that for sources of high emissions BAT is continuous monitoring. The operator has demonstrated previously via historic emission data, that they have a low flow rate and can comfortably meet the BAT-AEL (emissions have been under 1mg/m^3). We therefore do not consider the installation a high emission source and accept the annual monitoring frequency currently in the permit meets BAT.

BAT Conclusion 10 in relation to "other non-ferrous metals"

This section applies to "other non-ferrous metals", in this case the production of neodymium metal from the electrolysis process, effecting emissions points A5 to A9.

In relation to dust (particulate matter) the BATc does not stipulate a BAT-AEL but that dust should be monitored continuously or once per year. The BATc suggests that for sources of high emissions BAT is continuous monitoring. The operator has demonstrated previously via historic emission data, that they have a low flow rate, at a low concentration. We therefore do not consider the installation a high emission source and accept the annual monitoring frequency currently in the permit meets BAT.

In relation to NO_x the BATc does not stipulate a BAT-AEL but that NO_x should be monitored continuously or once per year. However, as the raw materials and process does not produce NO_x, and the heating method is electric rather than combustion, it is considered that monitoring for NOx is not required.

In relation to TVOC the BATc does not stipulate a BAT-AEL but that TVOC should be monitored continuously or once per year but only where relevant in view of the organic compounds content of the raw materials. As organic compounds aren't used it is considered that monitoring for TVOC is not required.

In relation to PCDD/F the BATc does not stipulate a BAT-AEL but that PCDD/F should be monitored once per year but only where relevant in view of factors such as the halogenated organic compounds content of the raw materials used. As halogenated organic compounds aren't used in the process it is considered that monitoring for PCDD/F is not required.

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-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 Notice response and our own records of the capability and performance of the installation at this site, we do not 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.

We do, however, 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 2.4 above, regarding undertaking a surface water risk assessment.

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: a) 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 b) a risk assessment 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 V004

Annex 4

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

There are no changes to be reported in this section.

Annex 5

Priority Compliance Issues & detailed assessment of Regulation 60 Notice responses where future action 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 operator has an accredited environmental management system (ISO 14001). The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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 BAT2. All furnaces operate by a prescribed melt by time process to optimize the energy used. A combination of techniques listed are used: l – suitable insulation for high temperature equipment such as steam and hot water pipes	

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
					o – use control systems that automatically activate the air extraction system or adjust the extraction rate depending on actual emissions. The operator has also recently installed LED lights, and zoned areas within the factory, which has reduced electricity consumption. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	2.3	CC	CC	The operator has confirmed in their response and site visit of 5th February 2018 that they are currently compliant with BAT 3. All tasks conducted and equipment operated are done so by following a detailed procedure known internally as Technical Instructions. Metal processes have a specific melt temperature and time. Analysis is undertaken to ensure process control is adequate. All operational equipment has emergency procedures where emergency scenarios are covered, this also includes environmental emergency procedures to prevent or minimise	

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
					emissions during emergency situations of significance for all normal, abnormal and emergency aspects. Staff undergo an eight week training cycle. The operator uses a combination of techniques listed to achieve BAT. c – feed weighting and metering systems j – temperature monitoring and control at melting and smelting furnaces to prevent the generation of metal and metal oxide fumes through overheating. 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 currently compliant with BAT 4. Abatement equipment is maintained and monitored annually by an external contractor. All inlets and outlets checked weekly for flow rates. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	

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
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 currently compliant with BAT 5. Diffuse air emissions are collected by local exhaust ventilation hoods and sent to an abatement system. All waste liquids are stored either in a single or double skinned IBC's depending on the substance, or located in a bund. All activities take place inside an enclosed building, with a concrete floor. 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);	1.1	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 6. Diffuse dust emissions are very low. This is not an inherently dusty activity. The furnaces operate under a layer of inert gas (argon). The EMS includes diffuse dust emissions. Rare earth metals are expensive, and the operator aims to lose as little as possible. For instance, all potentially dusty activities such as weighing raw materials have local exhaust ventilation going to an abatement system. The dust	

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
	(b) define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame.				collected from the abatement system is recycled in the process. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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 currently compliant with BAT 7. The operator uses a combination of techniques given to achieve BAT: c – sealed packaging of dust-forming materials or secondary material that contain water-soluble organic compounds f – dust/gas extraction devices placed at the transfer and tipping pints for dust-forming materials m – collect and treat emissions from storage with an abatement system designed to treat the compounds stored. Collect and treat before discharge any water that washes dust away. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	

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
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 stated in their response that they are currently compliant with BAT 8. The operator is using a combination of techniques listed to achieve BAT: c – extraction of dust from delivery points…and connection to a filtration system (for dust-forming materials) "All raw materials are weighed in specific charge weighing areas. Powdered raw materials are weighed with a Local Air Ventilation (LEV) handling system in operation." d – closed bags or drums to handle materials with dispersible or water-soluble components "All liquids i.e. oils, lubrication etc. are purposely purchased in small containers to minimise spillages in the event of a leak or rupture, and will be contained within the building." The Environment Agency is satisfied the operator is compliant with this BATC.	

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
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 currently compliant with BAT 9. All furnaces are vacuum furnaces with abatement equipment in operation on loading/unloading. The operator uses a combination of techniques given to achieve BAT. b – use a closed furnace with a properly designed dedusting system or seal the furnace and other process units with an adequate vent system d – dust or fume collection where dusty material transfers take place (e.g. furnace charging and tapping points, covered launders) 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	3.5	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 10. Please refer to Key Issues section for more information.	

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
	provision of data of an equivalent scientific quality				The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	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 are typically only undertaken during primary metal production, and therefore are not applicable at this site.	
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 this plant, as confirmed by the applicability section within BAT 12.	
13	In order to prevent NOx 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 applicable to the production at this site.	

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
14	In order to prevent or reduce the generation of waste water, BAT is to use one or a combination of the techniques given	1.4	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 14. They use one of the techniques given to achieve BAT: e – reuse surface run-off water The Environment Agency is satisfied the operator is compliant with this BATC.	
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		CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 15. Process water from the co-reduction for samarium cobalt is collected separately in a bunded effluent tank prior to being discharged to foul sewer. Clean site drainage is discharged to a holding lagoon prior to discharge to the River Mersey. The Environment Agency is satisfied the operator is compliant with this BATc.	
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	N/A	NA	NA	The Environment Agency has determined that this BAT Conclusion is not generally applicable for installations which only discharge wastewater to sewer.	

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	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 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). 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	

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					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 currently compliant with BAT18. They employ one of the techniques to achieve BAT. b – enclose noisy plants or components in sound-absorbing structures 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 currently compliant with BAT19. They employ one of the techniques to achieve BAT: b – minimise the use of odorous materials The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
	BAT 150-162: Ferro-alloys production (emission points A3 and A4 on permit)					
150	In order to use energy efficiently, BAT is to recover energy from the CO-rich exhaust gas generated in a closed	NA	NA	NA	The operator states in their response that BAT 150 is not applicable.	

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	submerged arc furnace or in a closed plasma dust process using one or a combination of the techniques given				The operator does not use an submerged arc furnace or a closed plasma dust process. The Environment Agency is satisfied that this BATC is not applicable.	
151	In order to use energy efficiently, BAT is to recover energy from the hot exhaust gas generated in a semi-closed submerged arc furnace using one or both of the techniques given	NA	NA	NA	The operator states in their response that BAT 151 is not applicable. The operator does not use a semi-closed submerged arc furnace. The Environment Agency is satisfied that this BATC is not applicable.	
152	In order to use energy efficiently, BAT is to recover energy from the exhaust gas generated in an open submerged arc furnace via the production of hot water	NA	NA	NA	The operator states in their response that BAT 152 is not applicable. The operator does not use an open submerged arc furnace. The Environment Agency is satisfied that this BATC is not applicable.	
153	In order to prevent or reduce and collect diffuse emissions to air from tapping and casting, BAT is to use one or both of the techniques given	3.2	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 153. They use one of the techniques given to achieve BAT. a – use of a hooding system.	

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					The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
154	In order to reduce dust and metal emissions to air from the storage, handling and transport of solid materials, and from pretreatment operations such as metering, mixing, blending and degreasing, and from tapping, casting and packaging, BAT is to use a bag filter BAT-AEL for Dust	3.5	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 154. The operator currently has to monitor emission points A3 and A4 for particulates. The limit on the current permit is 5mg/m^3, at an annual monitoring frequency to BS EN 13284-1. For ferro-alloys the BAT-AEL is 5mg/m^3. Please see Key Issue section for further information. The monitoring requirements from 30/06/2020 will not need to change to meet the BATC requirements. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
155	In order to reduce dust and metal emissions to air from crushing, briquetting, pelletising and sintering, BAT is to use a bag filter or a bag filter in combination with other techniques BAT-AEL for Dust	3.5	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 155. The operator currently has to monitor emission points A3 and A4 for particulates. The limit on the current permit is 5mg/m^3, at an annual monitoring frequency to BS EN	

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					13284-1. For ferro-alloys the BAT-AEL is 5mg/m^3. Please see Key Issue section for further information. The monitoring requirements from 30/06/2020 will not need to change to meet the BATC requirements. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
156	In order to reduce dust and metal emissions to air from an open or a semi-closed submerged arc furnace, BAT is to use a bag filter BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 156 is not applicable. The operator does not use an open or a semi-closed submerged arc furnace. The Environment Agency is satisfied that this BATC is not applicable.	
157	In order to reduce dust and metal emissions to air from a closed submerged arc furnace or a closed plasma dust process, BAT is to use one of the techniques given BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 157 is not applicable. The operator does not use a closed submerged arc furnace or a closed plasma dust process. The Environment Agency is satisfied that this BATC is not applicable.	
158	In order to reduce dust and metal emissions to air from a refractory-lined crucible for the production of ferro-	NA	NA	NA	The operator states in their response that BAT 158 is not applicable.	

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	molybdenum and ferro-vanadium, BAT is to use a bag filter BAT-AEL for Dust				The operator does not use a refractory-lined crucible for the production of ferro-molybdenum and ferro-vanadium. The Environment Agency is satisfied that this BATC is not applicable.	
159	In order to reduce PCDD/F emissions to air from a furnace producing ferro-alloys, BAT is to inject adsorbents and to use an ESP and/or a bag filter BAT-AEL for PCDD/F	NA	NA	NA	The operator carries out a rare earth melting process rather than a ferro-alloy production. No chlorine sources are used in the process. The Environment Agency is satisfied that this BATC does not apply.	
160	In order to reduce PAH and organic compound emissions to air from the degreasing of titanium swarf in rotary kilns, BAT is to use a thermal oxidiser	NA	NA	NA	The operator states in their response that BAT 160 is not applicable. The operator does not use titanium swarf in rotary kilns. The Environment Agency is satisfied that this BATC is not applicable.	
161	In order to reduce the quantities of slag sent for disposal, BAT is to organise operations on site so as to facilitate slag reuse or, failing that, slag recycling, including by using one or a combination of the techniques given	1.4	CC	CC	The operator states in their response that they are currently compliant with BAT 161. The operator uses one of the techniques given to achieve BAT: e – use of slag as raw material for the production of silico-manganese or other metallurgical application.	

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					All slag material is sorted to be reused in the main production process. The Environment Agency is satisfied the operation is currently compliant with this BAT conclusion.	
162	In order to reduce the quantities of filter dust and sludge sent for disposal, BAT is to organise operations on site so as to facilitate filter dust and sludge reuse or, failing that, filter dust and sludge recycling, including one or a combination of the techniques given	1.4	CC	CC	The operator states in their response that they are currently compliant with BAT 162. The operator uses one of the techniques given to achieve BAT: d – use of filter dust in other industries All slag material is sorted to be reused in the main production process. The Environment Agency is satisfied the operation is currently compliant with this BAT conclusion.	
	BAT 163-176: Nickel and/or cobalt production (emission points A1 and A2 on permit)					
163	In order to use energy efficiently, BAT is to use one or a combination of the techniques given	NA	NA	NA	This site was originally a Low Impact Installation with Standard Rules and energy usage is therefore low and the techniques given not applicable.	
164	In order to reduce diffuse dust emissions to air from the charging of a furnace, BAT is to use enclosed conveyor systems	NA	NA	NA	The operator states that this BATc is not applicable. The charge is loaded directly into water cooled induction furnaces which are all	

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					under vacuum and under an argon blanket during the melting and pouring process. The Environment Agency is satisfied that this BATc does not apply.	
165	In order to reduce diffuse dust emissions to air from smelting, BAT is to use covered and hooded launders connected to an abatement system	3.1	CC	CC	The operator confirms in their response that they are currently compliant with BAT 165. The charge is loaded into water cooled induction furnaces which are all under vacuum and under an argon blanket during the melting and pouring process. The Environment Agency is satisfied the operator is compliant with this BATC.	
166	In order to reduce diffuse dust emissions from converting processes, BAT is to use operation under negative pressure and capture hoods connected to an abatement system	3.1	CC	CC	The operator confirms in their response that they are currently compliant with BAT 166. The charge is loaded into water cooled induction furnaces which are all under vacuum and under an argon blanket during the melting and pouring process. The Environment Agency is satisfied the operator is compliant with this BATC.	
167	In order to reduce diffuse emissions from atmospheric and pressure leaching, BAT is to use both of the techniques given	NA	NA	NA	The operator confirmed at a site visit on 05/02/18 that BATc167 is not applicable. The operator does not use atmospheric or pressure leaching in cobalt production.	

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					The Environment Agency is satisfied this BATC is not applicable.	
168	In order to reduce diffuse emissions from solvent extraction refining, BAT is to use one of the techniques given	NA	NA	NA	The operator has indicated in their response that BAT 168 is not applicable. The operator does not carry out solvent extraction refining. The Environment Agency is satisfied this BATC is not applicable.	
169	In order to reduce diffuse emissions from electrowinning, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has indicated in their response that BAT 169 is not applicable. The operator does not carry out an electrowinning process. The Environment Agency is satisfied this BATC is not applicable.	
170	In order to reduce diffuse emissions from the hydrogen reduction process when producing nickel powder and nickel briquettes (pressure processes), BAT is to use a sealed or closed reactor, a settler and a pressure autoclave/vessel, a powder conveyor and a product silo	NA	NA	NA	The operator has indicated in their response that BAT 170 is not applicable. The operator does not carry out an hydrogen reduction process to produce nickel powder and nickel briquettes. The Environment Agency is satisfied this BATC is not applicable.	
171	When processing sulphidic ores, in order to reduce dust and metal emissions to air from the handling and	NA	NA	NA	The operator has indicated in their response that BAT 171 is not applicable.	

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	storage of raw materials, material pretreatment processes (such as ore preparation and ore/concentrate drying), furnace charging, smelting, converting, thermal refining and nickel powder and briquette production, BAT is to use a bag filter or a combination of an ESP and a bag filter BAT-AEL for Dust				The operator does not process sulphidic ores. The Environment Agency is satisfied this BATC is not applicable.	
172	In order to reduce nickel and chlorine emissions to air from the atmospheric or pressure leaching processes, BAT is to use a wet scrubber BAT-AELs for Ni and Cl 2	NA	NA	NA	The operator has indicated in their response that BAT 172 is not applicable. The operator does not carry out an atmospheric or pressure leaching process. The Environment Agency is satisfied this BATC is not applicable.	
173	In order to reduce nickel emissions to air from the nickel matte refining process using ferric chloride with chlorine, BAT is to use a bag filter BAT-AEL for Ni	NA	NA	NA	The operator has indicated in their response that BAT 173 is not applicable. The operator does not carry out a nickel matte refining process. The Environment Agency is satisfied this BATC is not applicable.	
174	When processing sulphidic ores, in order to reduce SO 2 emissions to air (other than those that are routed to the sulphuric acid plant) from smelting and	NA	NA	NA	The operator has indicated in their response that BAT 174 is not applicable. The operator does not process sulphidic ores.	

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	converting, BAT is to use one of the techniques given				The Environment Agency is satisfied this BATC is not applicable.	
175	In order to reduce NH 3 emissions to air from nickel powder and briquette production, BAT is to use a wet scrubber	NA	NA	NA	The operator has indicated in their response that BAT 175 is not applicable. The operator does not produce nickel powder and briquette. The Environment Agency is satisfied this BATC is not applicable.	
176	In order to reduce the quantities of waste sent for disposal, 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 indicated in their response that they are currently compliant with BAT 176. Although the operator does not use one of the techniques listed and described in the BATC, these techniques are neither prescriptive nor exhaustive. Other techniques may be used that ensure at least an equivalent level of environmental protection. In this case, due to the high value of the materials used, the operator collects all slag material, including dust from the bag filter, sorts it and reuses it in the main production process. The Environment Agency is satisfied that this technique will provide the same level of protection as the listed BATC techniques	

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					and so that the operator is currently compliant with this BAT conclusion.	