

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

AMG Resources Ltd.

**Nevill's Dock
Llanelli
Carmarthenshire
SA15 2HD**

Permit number
EPR/BM2381IQ

AMG Resources Ltd. Llanelli

Permit number EPR/BM2381IQ

Introductory note

This introductory note does not form a part of the permit

The main features of this permit are the de-tinning of scrap tinplate by a chemical process and the recovery of the tin from the liquors used via an electrochemical process.

Tinplate feedstock, either from scrap or returned used steel cans, is shredded and magnetically separated from non ferrous material from which the aluminium content is later recovered. The ferrous material is then conveyed through a series of thirteen tanks fitted with screw conveyors where the chemical leaching of the tin is undertaken.

The first nine of the tanks contain a hot sodium hydroxide and sodium nitrate solution that progressively strips the tin from the steel. This process produces steam which carries most of the evolved ammonia and nitrogen out through roof vents. The shredded tinplate and chemical solution flows counter currently resulting in stripped steel, which is then rinsed in the last four tanks and then baled ready for subsequent sale to a steelworks.

The chemical solution, containing sodium stannate, is then filtered. This tin rich liquor then passes to the electrochemical stage where the tin is deposited on the cathodes. These are then lifted out, washed, dried and then dipped in a bath of molten tin to melt off the plated tin. This tin is then either cast into ingots or recovered as a powder for sale.

As a consequence of this process significant quantities of steel and aluminium are also recovered which are sent for recycling elsewhere.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit

Description	Date	Comments
Application BM2381	Received 28/12/01	Duly Made 28/12/01
1st schedule 4 notice request for information	Request issued 08/03/02	Response received 19/04/02
Request by Agency to extend determination to 23/05/02	Request dated 24/05/02	Request accepted 07/05/02
Request by Agency to extend determination to 28/07/02	Request dated 25/04/02	Request accepted 11/06/02
2nd Schedule 4 Notice request for information	Request issued 22/07/02	Response received 13/09/02

Status log of the permit

Description	Date	Comments
Requested by Agency to extend determination to 15/11/02	Request dated 16/09/02	Request accepted 19/09/02
Requested by Agency to extend determination to 17/01/03	Request dated 08/11/02	Request accepted 11/11/02
Requested by Agency to extend determination to 04/04/03	Request dated 10/01/03	Request accepted 13/01/03
Requested by Agency to extend determination to 14/05/03	Request dated 01/04/03	Request accepted 03/04/03
Requested by Agency to extend determination to 14/07/03	Request dated 12/05/03	Request accepted 13/05/03
Requested by Agency to extend determination to 14/10/03	Request dated 03/07/03	Request accepted 07/07/03
Requested by Agency to extend determination to 14/11/03	Request dated 03/10/03	Request accepted 07/10/03
Permit BM2381	Determined 11/11/03	
Variation notice BX1721	Served 21/01/04	Agency initiated – clarification of condition 3.1.6
Variation notice LP3639BS	Served 22/01/04	Agency initiated and Operator requested – removal of conditions 2.2.3 and 6.3.3, removal of requirement to sample at low tide, introduction of limits for surface water releases and addition of improvement condition to assess the interference from sea-water contamination on analytical results obtained from surface water discharge.
Variation notice HP3339LS	Effective 02/02/2006	Agency Initiated – Clarification of condition 6.3.2 and addition of 6.3.3 requiring operator not to exceed surface water limits.
Variation EPR/BM2381IQ/V005	Duly Made 17/07/2014	

Status log of the permit

Description	Date	Comments
Request to extend determination	Request dated 28/10/2014	Response dated 29/10/2014
Variation EPR/BM2381Q/V005 determined	22/12/2014	Variation to remove air emission point, change sampling suite for surface water monitoring and insert improvement condition regarding the assessment of potential release of process liquids and sludges to ground and surface water drains
Regulation 60(1) Notice of request for information	27/07/16	
Regulation 60(1) response received	23/11/16	Implementation of BAT conclusions under IED
Natural Resources Wales Non-Ferrous Metals Sector Review 2017 – consolidated permit EPR/BM2381Q/V006	13/06/17	Permit issued to AMG Resources Limited

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/BM2381IQ

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BM2381IQ/V006 authorising,

AMG Resources Limited

("the operator"),

whose registered office is

Nevill's Dock

Llanelli

Carmarthenshire

SA15 2HD

Company registration number **1516685**

to operate an installation at

AMG Resources Ltd

Nevill's Dock

Llanelli

Carmarthenshire

SA15 2HD

to the extent authorised by and subject to the conditions of this permit.

Signed

Date

	13/06/2017
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Authorised on behalf of Natural Resources Wales

Conditions

Management

1.1 General management

- 1.1.1 The Operator shall manage and operate the activities;
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the Operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.
- 1.1.4 The Operator shall comply with the requirements of an approved competence scheme.

1.2 Energy efficiency

- 1.2.1 The Operator shall;
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
 - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

- 1.3.1 The Operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
 - (b) maintain records of raw materials and water used in the activities;
 - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
 - (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The Operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities, and;

- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
 - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in blue on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.
- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.2 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table(s) S2.2; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.4 The Operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

2.3.5 The Operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Improvement programme

2.4.1 The Operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by Natural Resources Wales.

2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the Operator shall notify Natural Resources Wales within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The Operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
- (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the Operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The Operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the Operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The Operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

3.5 Monitoring

3.5.1 The Operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1 and S3.2 ;
- (b) surface water or groundwater specified in table S3.3;

3.5.2 The Operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by Natural Resources Wales.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2, and S3.3 unless otherwise agreed in writing by Natural Resources Wales.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by Natural Resources Wales, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The Operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by Natural Resources Wales.

4.2 Reporting

4.2.1 The Operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

- 4.2.4 The Operator shall, unless notice under this condition has been served within the preceding four years, submit to Natural Resources Wales, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 Within 1 month of the end of each quarter, the Operator shall submit to Natural Resources Wales using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter, if during that quarter the total amount accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.
- 4.2.6 The Operator shall submit an annual solvent management plan in order to demonstrate compliance with the requirements of the Industrial Emissions Directive, by 31 January each year in respect of the previous year.

4.3 Notifications

- 4.3.1 (a) In the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
- (i) inform Natural Resources Wales,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition the operator must immediately—
- (i) inform Natural Resources Wales, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 [(a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit,] shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where Natural Resources Wales has requested in writing that it shall be notified when the Operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 Natural Resources Wales shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and

- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the Operator.

In any other case:

- (a) the death of any of the named Operators (where the Operator consists of more than one named individual);
- (b) any change in the Operator's name(s) or address(es); and
- (c) any steps taken with a view to the Operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the Operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) Natural Resources Wales shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the Operator has entered into a climate change agreement with the Government, Natural Resources Wales shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit, references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	S2.2 A1 (a) - Producing non ferrous metals from secondary raw materials by metallurgical, chemical or electrolytic activities.	Chemical treatment of scrap metals and cans and electrolyte recovery of tin from the chemical liquor.	From chemicals added to shredded metal to the recovery of tin following electrolysis.

Directly Associated Activity

A2	Storage and handling of raw materials.	Raw material storage, handling, sorting and preparation including the hammer mills, magnetic separators, shredders, oils, chemicals and the aluminium recovery plant.	Receipt of raw materials, to transfer, to chemical treatment or usage on site.
A3	Site generated energy supply for process.	Generation of heat, steam etc	Boiler that provides energy for the process.
A4	Processing of product.	Cathode melting, furnace melting and casting of tin.	Production of solid tin and the final product storage areas.
A5	Handling and storage of solid wastes.	From the generation of solid wastes to the determination of their fate and transfer off site.	Point of production of any solid wastes to their collection, storage and transfer off site.
A6	Handling and storage of liquid wastes.	Spent process liquors, wash waters, other effluents	Point of production of any liquid wastes to their collection, storage and transfer off site.
A7	The operation and control of emissions abatement systems	Operation of abatement systems for air emissions and effluent treatment.	To ensure the efficient and effective operation of emission abatement plant.

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	Response to questions 2.3 given in section B2.3 of the application.	28/12/01
Response to Schedule 4, Part 1 Notice (08/03/02)	Response to questions 1, 5 – 8.	19/04/02
Response to 2 nd Schedule 4 Part 1 Notice (22/07/02)	Response to questions 31 – 38	13/09/02

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1	<p>The operator shall submit, for approval by Natural Resources Wales, a report setting out progress to achieving the BAT Conclusions and BAT-AEL's where BAT is currently not achieved, but will be achieved by the 30th June 2020. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none">1. Current performance against the BAT Conclusions and BAT-AEL.2. Methodology for reaching the AELs.3. Associated targets / timelines for reaching compliance by 30th June 2020. <p>The report shall address all of the relevant BAT Conclusions</p>	Within 3 months of the issue of this variation

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels

Raw materials and fuel description	Specification
Gas oil used as secondary fuel	Less than 0.1% sulphur content..

Schedule 3 (a) – Emissions and monitoring until 12th June 2020

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A2	Tin melt recovery plant At a height of 2.65 metres	Particulate matter	10 mg/m ³	-	6-monthly	-
		Oxides of Nitrogen		-	6-monthly	-
		Copper, lead, zinc and their compounds taken together (as metal)	2.0 mg/m ³	-	6-monthly	-
		Cadmium, arsenic, nickel and their compounds taken together (as elements)	0.2 mg/m ³	-	6-monthly	-
		Tin and its compounds (as Sn)	2.0 mg/m ³	-	6-monthly	-
		Dioxins (ITEQ)	0.1 ng/m ³	-	Annual	-
A3	Boiler (usually gas fired) (steam and heat generation) At a height of 8.40 metres	Particulate matter	25 mg/m ³	-	6-monthly	-
		Oxides of Nitrogen	200 mg/m ³	-	6-monthly	-

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 (outfall to River Liedi, Loughor Estuary)	Effluent Treatment Plant	Total Oxidised Nitrogen (TON) as N mg l ⁻¹	3 mg/l	-	Monthly	-

Table S3.5 groundwater monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
G1, G2, G3, G4, G5, G6, G7	Depth to groundwater (m)	6 monthly	-	-
	Groundwater level (m AOD)	6 monthly	-	-
	Temperature °C	6 monthly	-	-
	pH	6 monthly	-	-
	Conductivity at 20°C $\mu\text{S Cm}^{-1}$	6 monthly	-	-
	Suspended Solids (mg/l)	6 monthly	-	-
	Ammoniacal Nitrogen (mg/l)	6 monthly	-	-
	Nitrite (mg/l)	6 monthly	-	-
	Total Oxidised Nitrogen (TON) (mg/l)	6 monthly	-	-
	Chloride	6 monthly	-	-
	Aluminium and its compounds (as Al)	6 monthly	-	-
	Arsenic and its compound(as As)	6 monthly	-	-
	Boron and its compound (as B)	6 monthly	-	-
	Cadmium and its compounds, expressed as cadmium (Total Cd)	6 monthly	-	-
	Chromium and its compounds (as Cr)	6 monthly	-	-

Table S3.5 groundwater monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Copper and its compounds (as Cu)	6 monthly	-	-
	Iron and its compounds (as Fe)	6 monthly	-	-
	Lead and its compounds (as Pb)	6 monthly	-	-
	Manganes and its compounds (as MN)	6 monthly	-	-
	Mercury and its compounds (as Hg)	6 monthly	-	-
	Nickel and its compounds (as Ni)	6 monthly	-	-
	Selenium and its compounds (as Se)	6 monthly	-	-
	Sodium and its compounds (as Na)	6 monthly	-	-
	Tin and its compounds (as Sn)	6 monthly	-	-
	Zinc and its compounds (as Zn)	6 monthly	-	-
	Total Hydrocarbon oil	6 monthly	-	-

Schedule 4 – Reporting until 12th June 2020

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3	Every 12 months	1 January
Emissions to water Parameters as required by condition 3.5.1	W1	Every 12 months	Every 12 months
Groundwater monitoring Parameters as required by condition 3.5.1	G1, G2, G3, G4, G5, G6 and G7	Every 12 months	Every 12 months

Table S4.2 Performance parameters		
Parameter	Frequency of assessment	Units
Energy usage	Annually	MWh
Total raw material used	Annually	tonnes
Waste recovered	Annually	tonnes
Waste sent for disposal	Annually	tonnes

Table S4.3 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form A1 & A2 or other form as agreed in writing by Natural Resources Wales	20/10/03
Water and Land	Groundwater annual monitoring return, Form W1 or other form as agreed in writing by Natural Resources Wales	20/10/03
Energy usage	Form E1 or other form as agreed in writing by Natural Resources Wales	20/10/03
Waste Return	Waste Return Form R1	20/10/03

Schedule 3 (b) – Emissions and monitoring from 13th June 2020

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A2	Tin melt recovery plant At a height of 2.65 metres	Particulate matter	≤5 mg/m ³	-	Continuous	EN 13284-2
		Oxides of Nitrogen		-	6-monthly	-
		Copper, lead, zinc and their compounds taken together (as metal)	2.0 mg/m ³	-	6-monthly	-
		Cadmium, arsenic, nickel and their compounds taken together (as elements)	0.2 mg/m ³	-	6-monthly	-
		Tin and its compounds (as Sn)	2.0 mg/m ³	-	6-monthly	-
		Dioxins (ITEQ)	0.1 ng/m ³	-	Annual	-
		A3	Boiler (usually gas fired) (steam and heat generation) At a height of 8.40 metres	Particulate matter	25 mg/m ³	-
Oxides of Nitrogen	200 mg/m ³			-	6-monthly	-

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 (outfall to River Liedi, Loughor Estuary)	Effluent Treatment Plant	Total Oxidised Nitrogen (TON) as N mg l ⁻¹	3 mg/l	-	Monthly	-

Table S3.5 groundwater monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
G1, G2, G3, G4, G5, G6, G7	Depth to groundwater (m)	6 monthly	-	-
	Groundwater level (m AOD)	6 monthly	-	-
	Temperature °C	6 monthly	-	-
	pH	6 monthly	-	-
	Conductivity at 20°C $\mu\text{S Cm}^{-1}$	6 monthly	-	-
	Suspended Solids (mg/l)	6 monthly	-	-
	Ammoniacal Nitrogen (mg/l)	6 monthly	-	-
	Nitrite (mg/l)	6 monthly	-	-
	Total Oxidised Nitrogen (TON) (mg/l)	6 monthly	-	-
	Chloride	6 monthly	-	-
	Aluminium and its compounds (as Al)	6 monthly	-	-
	Arsenic and its compound(as As)	6 monthly	-	-
	Boron and its compound (as B)	6 monthly	-	-
	Cadmium and its compounds, expressed as cadmium (Total Cd)	6 monthly	-	-
	Chromium and its compounds (as Cr)	6 monthly	-	-

Table S3.5 groundwater monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Copper and its compounds (as Cu)	6 monthly	-	-
	Iron and its compounds (as Fe)	6 monthly	-	-
	Lead and its compounds (as Pb)	6 monthly	-	-
	Manganese and its compounds (as Mn)	6 monthly	-	-
	Mercury and its compounds (as Hg)	6 monthly	-	-
	Nickel and its compounds (as Ni)	6 monthly	-	-
	Selenium and its compounds (as Se)	6 monthly	-	-
	Sodium and its compounds (as Na)	6 monthly	-	-
	Tin and its compounds (as Sn)	6 monthly	-	-
	Zinc and its compounds (as Zn)	6 monthly	-	-
	Total Hydrocarbon oil	6 monthly	-	-

Schedule 4 – Reporting from 13th June 2020

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3	Every 12 months	1 January
Emissions to water Parameters as required by condition 3.5.1	W1	Every 12 months	1 January
Groundwater monitoring Parameters as required by condition 3.5.1	G1, G2, G3, G4, G5, G6 and G7	Every 12 months	1 January
Other performance indicators	-	Every 12 months	1 January

Table S4.2 Performance parameters

Parameter	Frequency of assessment	Units
Energy usage	Annually	MWh
Total raw material used	Annually	tonnes
Waste recovered	Annually	tonnes
Waste sent for disposal	Annually	tonnes

Table S4.3 Reporting forms

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by Natural Resources Wales	13/06/2020
Water and Land	Form water 1 or other form as agreed in writing by Natural Resources Wales	13/06/2020
Energy usage	Form energy 1 or other form as agreed in writing by Natural Resources Wales	13/06/2020
Waste Return	Waste Return form available from http://naturalresources.wales/waste/new-wales-operator-waste-return	-

Table S4.3 Reporting forms

Media/parameter	Reporting format	Date of form
Other performance indicators	Form performance 1 or other form as agreed in writing by Natural Resources Wales	13/06/2020

Schedule 5 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
To be notified Immediately	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a permit condition	
To be notified immediately	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:	
To be notified immediately	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B - to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 - Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the Operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“disposal”. Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit..

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Waste code” means the six digit code referable to a type of waste in accordance with the list of wastes established by Commission Decision 2000/532/EC as amended from time to time (the ‘List of Wastes Decision’) and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or *“WFD”* means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

“year” means calendar year ending 31 December.

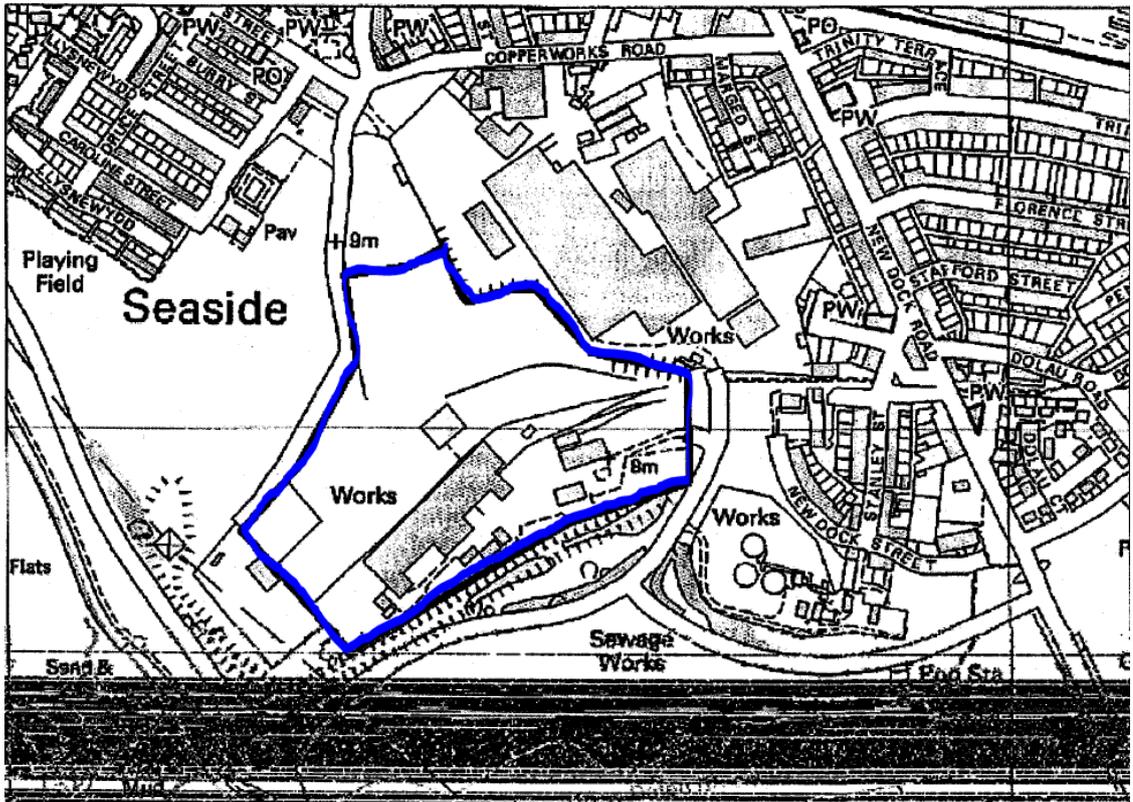
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

Schedule 7 - Site plan



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END OF PERMIT

Permit Number: BM3381IQ

Operator: AMG Resources Ltd

Facility: AMG Resources Ltd

Form Number: Air1 / 13/06/20

Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission		Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
		Limit Value	Reference Period				
A2	Particulate Matter	5 mg/m ³	Continuous		BS EN 13284-1		
	Copper, lead, zinc and their compounds taken together (as metal)	2.0 mg/m ³			BS EN 13284-1		
	Cadmium, arsenic, nickel and their compounds taken together (as elements)	0.2 mg/m ³			-		
	Tin and its compounds (as Sn)	2.0 mg/m ³			-		
	Dioxins (ITEQ)	0.1 ng/m ³			-		
A3	Particulate matter	5 mg/m ³	Continuous		BS EN 13284-1		
A3	Oxides of Nitrogen	200 mg/m ³			-		

- [1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
- [2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
- [3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
- [4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: BM3381IQ

Operator: AMG Resources Limited

Facility: AMG Resources Ltd

Form Number: Water1 / 13/06/20

Reporting of emissions to water (other than to sewer) and land for the period from DD/MM/YYYY to DD/MM/YYYY

Emission							
Emission Point	Substance / Parameter	Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
W1	Total Oxidised Nitrogen (TON) as N mg l-1	3 mg/l					

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: BM3381IQ Operator: AMG Resources Ltd]
 Facility: AMG Resources Ltd Form Number: Energy1 / 13/06/20

Reporting of Energy Usage for the year 2020

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh		
Natural Gas	MWh		
Gas Oil	tonnes		
Recovered Fuel Oil	tonnes		
TOTAL	-		

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments :

Signed
(Authorised to sign as representative of Operator)

Date.....

Permit Number: BM3381IQ

Operator: AMG Resources Ltd

Facility: AMG Resources Ltd

Form Number: Performance1 / 13/06/20

Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY

Parameter	Units
Total raw material used	tonnes

Operator's comments :

Signed
(Authorised to sign as representative of Operator)

Date.....