

Permitting decisions

Bespoke permit

We have decided to grant the permit for Wilton Mineral Processing and Refining Facility operated by Peak Technology Metals Limited.

The permit number is EPR/YP3938JL.

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

Purpose of this document

This decision document provides a record of the decision making process. It summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account.

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

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- shows how we have considered the consultation responses.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit. The introductory note summarises what the permit covers.

Key issues of the decision

1. Applicant/Operator Identity

The original application was received from Peak African Minerals Limited registered in Port Louis, Mauritius. Although we could not accept this company as the legal operator of the installation we agreed to Duly Make and progress the application while the issue was resolved. The response to Question 1 of our Schedule 5 notice dated 01/05/18 (received 02/06/18) stated that Peak Technology Metals Limited, Companies House registration number 11384963, will be the operator. Updated application forms A and F1 were submitted to support this change. This company name, number and registered address have been used in the permit.

2. Water voles

Our screening identified the possible presence of a protected species (water vole – *Arvicola Amphibius*) close to the proposed installation. In response to Question 2 of our Schedule 5 notice dated 01/05/18 (received 02/06/18) the applicant submitted a Water Vole Survey from July 2017 prepared in support of their planning application and proposed mitigation measures for protection of the species.

These measures are referenced in the operating techniques Table S1.2 of the permit.

The survey also identified the presence of an invasive species, Himalayan Balsam, during the survey. Himalayan Balsam is listed under schedule 9 of the Wildlife and Countryside Act 1981. As such it is an offence to introduce or spread this into the wild. The report suggested the need to devise and implement an invasive species management plan including marking out areas of stands and maintaining these as a no-work area and treating, removing and disposing of material as controlled waste. However, this is considered in the planning application process with the requirement to submit a Habitat and Landscape Management Plan for approval so to avoid 'double regulation' we have not imposed further conditions.

3. Site Plan

A site plan showing emission points to air was received in the application. In response to Question 3 of our Schedule 5 notice dated 01/05/18 (received 02/06/18) the applicant submitted a revised plan showing the location of the discharge point to the Sembcorp operated sewer system. However, although this point was on the edge of the site it was well outside the installation boundary. A further revision (r2) of the site plan was received on 24/05/18 showing a thin extension of the installation boundary to the W1 discharge point. This extra area is already covered by the submitted site condition report that relied on the surrender investigation of the larger Invista site in 2010. A final point was clarified during operator review of the draft permit about the identification and location of emission points to air A6 and A7. This did not affect the conclusions of the Air Quality Assessment. A further revised site plan was submitted (v3). This site plan has been incorporated into Schedule 7 of the permit.

4. Discharges to water

Rainwater uncontaminated by process materials will be collected in attenuation storage designed to accommodate a 1 in 100 year event and will be discharged to the adjoining surface water at up to 37 litres/second.

Aqueous process streams, including from storage areas, will be treated in an on-site effluent treatment plant before discharge at point W1 via private sewer to the Sembcorp facility to the north of the site that treats effluent streams from the whole Wilton multi-operator site before discharge to the River Tees under an Environment Agency permit.

In the submitted H1 risk assessment for discharges to water the applicant only considered chloride and fluoride but assessed a worst case of the installation discharge concentrations and a typical Sembcorp discharge rate of 0.24 m³/s.

Although the estimated chloride concentration in the W1 effluent is estimated to be 29g/l the final discharge is to a saline estuary so there are no Environmental Quality Standard (EQS) limits in this case. The estimated fluoride discharge concentration of 171 mg/l fails the H1 Test 1 against both the Annual Average EQS of 5 mg/l and the Maximum allowable concentration (MAC) EQS of 15g/l. Test 2 is not relevant in this case as the discharge is not riverine. Applying Tests 3 to 5 for TRaC waters results in an acceptable effective volume flux (EVF) of 2.05 against an allowable EVF of 2.70. If the maximum Sembcorp discharge rate is used the MAC EVF may exceed 2.70 so we also tested sensitivity by assuming a direct discharge from the installation to TRaC waters (but still assuming that the discharge is not negatively buoyant even without the Sembcorp dilution). In this case the MAC EVF falls to 0.43 so we conclude this proposed discharge of fluoride screens out and further detailed modelling is not required. We have set an Emission Limit Value (ELV) in the permit for Fluoride as NaF of 2.0 g/l based on this worst case assessment and an allowable EVF of 2.70.

In response to Question 4 of our Schedule 5 notice dated 01/05/18 (received 02/06/18), to provide evidence that the sewerage operator Sembcorp has given consent for the proposed discharge from the installation, the applicant submitted a draft internal consent to discharge liquid effluent setting out the

proposed location and limits for sampling the proposed discharge.

The list of consented substances is in two parts. In the first part are those that are consented against Sembcorp's Wilton Site Effluent Consent are typical effluent constituents will not require specific limits in the Peak Technology Materials permit. In the second part are those declared by the applicant at measurable concentrations that are not consented against Sembcorp's Wilton Site Effluent Consent. We have accepted the applicants estimated concentrations reflected in consent limits from Sembcorp as a basis for setting emission limit vales at W1 for Barium, Aluminium and Sulphate.

However, we have also set an improvement condition to sample and analyse a wide range of potential effluent constituents once commissioning is complete for comparison against the predicted effluent composition (where relevant). This includes the components such as rare earth elements excluded from the Sembcorp consent because the applicant expects their concentration to be zero (less than 0.01 g/l) because a consented discharge of up to 2190 m3/day at 0.01g/l could contain as much as 21.9kg per day of an element for which there is limited environmental toxicity data.

5. Air Quality Assessment

The applicant submitted an Air Quality Assessment report as part of the application and supporting electronic modelling files (AERMOD) in response to the Not Duly Made request for Further Information. We audited this submission and requested further information, via Schedule 5 notice dated 01/05/18, to include

- the impact of potential oxides of nitrogen emissions from the gas fired kilns and calciners
- the impact of site emissions to air on the North York Moors Special Area of Conservation(SAC)/Special Protected Area (SPA) habitat site
- correction to the hydrogen chloride emissions rate

The applicant submitted a response as an addendum to the Air Quality Assessment but our audit of this addendum identified several quantitative errors. These were corrected in a revised addendum dated, and submitted on, 25/07/18.

Maximum modelled concentrations at residential receptors

	PM₁₀ Long Term	PM₁₀ Short Term	PM_{2.5}	SO₂ 24 hr	SO₂ 1 hr	SO₂ 15 min	HCl 1 hr	NO_x Long Term	NO_x Short Term	VOCs
Air Quality Objective µg/m ³	40	50	25	125	350	266	750	40	200	5 (as benzene)
Process Contribution µg/m ³	0.22	0.54	0.22	8.01	42.33	65.55	1.18	0.20	1.39	0.094
PC as % of AQO	0.56	1.09	0.89	6.41	12.1	24.6	0.16	0.50	0.70	1.87
Predicted Environmental Concentration (PC + Bckgrd) µg/m ³	12.77	15.35	8.95	15.01	54.19	81.45	1.44	12.12	25.23	0.40

Maximum modelled concentrations at ecological receptors

	Teesmouth Ramsar/SPA 1 (3.8km W of Site)	Teesmouth Ramsar/SPA 2 (5.7km N of Site)	Teesmouth Ramsar/SPA 3 (5.9km NE of Site)	North York Moors SAC/SPA (8.9km SE of Site)
Critical Level NO _x µg/m ³ (Annual Mean)	30	30	30	30
Process Contribution NO _x µg/m ³	0.00219	0.00476	0.00617	0.00042
PC as % of AQO	0.0073	0.016	0.021	0.0014
Predicted Environmental Concentration (PC + Bckgrd) µg/m ³	18.94	18.94	18.94	9.82
Critical Level NO _x µg/m ³ (24 hour Mean)	75	75	75	75
Process Contribution NO _x µg/m ³	0.0928	0.0939	0.1355	0.0081
PC as % of AQO	0.12	0.13	0.18	0.01
Predicted Environmental Concentration (PC + Bckgrd) µg/m ³	22.35	22.35	22.35	11.59
Critical Level SO ₂ µg/m ³ (Annual Mean)	20	20	20	20
Process Contribution SO ₂ µg/m ³	0.025	0.052	0.067	0.004
PC as % of AQO	0.13	0.26	0.34	0.02
Predicted Environmental Concentration (PC + Bckgrd) µg/m ³	5.24	5.26	5.28	1.78
Critical Level HF µg/m ³ (Annual Mean) (as proxy for HCl)	5	5	5	5
Process Contribution HCl µg/m ³	0.030	0.029	0.035	0.002
PC as % of AQO	0.59	0.58	0.71	0.038
Predicted Environmental Concentration (PC + Bckgrd) µg/m ³	0.29	0.29	0.29	0.26

Acidic Gas Critical Loads at Ecological receptors

	Teesmouth and Cleveland Coast SPA/Ramsar (Max of 3 locations)	North York Moors SAC/SPA
ACIDIFICATION CRITICAL LOAD		
Modelled max NO _x annual mean concentration - µg/m ³ Process Contribution	0.0062	0.00042
Nitrogen Dry deposition velocity (worst case for forest) – m/s	0.003	0.003
Nitrogen Dry deposition flux - µg/m ² /s	0.0000186	0.00000126
Nitrogen Dry deposition flux converted to acidity keq/ha/yr	0.00013	0.0000086
Modelled max SO ₂ annual mean concentration - µg/m ³ Process Contribution	0.067	0.004
SO ₂ Dry deposition velocity (worst case for forest) – m/s	0.024	0.0240
SO ₂ Dry deposition flux - µg/m ² /s	0.0016	0.000096
SO ₂ Dry deposition flux converted to acidity keq/ha/yr	0.016	0.00095
Modelled max HCl annual mean concentration - µg/m ³	0.035	0.002
HCl Dry deposition velocity (worst case for forest) – m/s	0.06	0.06
HCl Dry deposition flux - µg/m ² /s	0.0021	0.0012
HCl Dry deposition flux converted to acidity keq/ha/yr	0.018	0.0010
Process Contribution as Total acidity deposition flux – keq/ha/yr	0.034	0.002
Max Critical Load Max Sulphur – keq/ha/yr for most sensitive feature of habitat	4.00 (calcareous grassland using base cation)	0.384 (bogs)
Process contribution as % of MaxCLmaxS (Nitrogen contribution is trivial and there is no separate critical load for HCl so the total is compared against the Sulphur value)	0.85	0.51
Process Contribution 1% significance critical load threshold for acidity exceeded?	No	No

The Predicted Environmental Concentrations from the modelled emissions at residential receptors are well within the relevant Air Quality Objectives.

The process contribution emissions of NO_x, SO₂ and HCl from the installation at ecological receptor are <1% of the relevant Air Quality Objective for Critical levels and for Acidic gas deposition so the conclusion is that they will not have a significant effect on the habitat sites.

We have set Emission Limit Values in the permit based on the emission concentrations corresponding to the modelled mass emission rates. In the case of sulphur dioxide and hydrogen chloride these are above the benchmark range in our guidance for the Inorganic Chemicals Sector (EPR 4.03).

We have conducted our own check modelling and sensitivity analysis and, whilst we do not agree exactly with all the calculated values from the submitted modelling, we agree with the applicant's conclusions that the impact of the emissions from the installation at the identified human and ecological receptor locations will be within the relevant limits in all cases and acceptable.

6. Storage of waste and other materials

The storage volume of 60 tonnes for solid process waste (leach residue + neutralisation residue) in the application seemed to only allow for approximately one day of operation without removal. In response to Question 7 of our Schedule 5 notice dated 01/05/18 (received 02/06/18) the applicant has clarified that there will actually be three stockpiles of approximately 60tonne each within the bunker in normal operation but the bunker dimensions of 19m x 7m by 2.4m high would allow for a maximum of approximately 380tonne if necessary (after which the bunker wall height could be increased and an area next to the bunker used as well).

In response to Question 8 of our Schedule 5 notice dated 01/05/18 (received 02/06/18) the applicant has confirmed that all storage containers for liquids and potentially hazardous substances have been designed to meet the requirements of the indicative BAT for storage and handling of raw materials. This will include sealed bunds, double walled tanks and leak detection channels as stated within Inorganic Chemicals Guidance S4.03.

The Operating Techniques Appendix in the application has been updated (as version 2) and resubmitted to reflect these commitments.

7. Environmental Management System

The operator intends to develop the detail of the Environmental Management System in advance of commencement of operations. In response to Question 9 of our Schedule 5 notice dated 01/05/18 (received 02/06/18) the applicant has confirmed that this management system will address all the points in the guidance on the gov.uk webpage – Develop a management system: environmental permits at <https://www.gov.uk/guidance/develop-a-management-system-environmental-permits> and will follow their submitted Revised Management Summary.

We have included a pre-operational condition in the permit to make a more detailed summary of the EMS available to the Environment Agency for approval not less than one month before the start of operations.

8. Naturally Occurring Radioactive Materials (NORM)

The raw material rare earth concentrate contains low levels of NORMs, primarily Uranium and Thorium. These are precipitated out in the refining process and will be present in the solid waste filter cake. However, the operator has confirmed that the levels of NORMs within the concentrate are below the thresholds set within the Radioactive Substances Act 1993 so no special handling is required.

9. Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
Consultation	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website.</p> <p>We consulted the following organisations:</p> <p>Public Health England Local Director of Public Health (Redcar and Cleveland Borough Council) Health and Safety Executive Local Authority Environmental Health Department (Redcar and Cleveland Borough Council)</p> <p>We received responses from Redcar and Cleveland Borough Council Environmental Health Department and one member of the public.</p> <p>The comments and our responses are summarised in the consultation section.</p>
Operator	
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.
The facility	
The regulated facility	<p>We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits.</p> <p>The applicant originally applied for one 4.2 A(1)(a)(v) activity but this was corrected at Duly Making (with an additional fee) to four 4.2A(1)(a)(v) activities for the four production streams and one 5.4 A(1)(a)(ii) activity for a non-hazardous effluent treatment plant >300 tonnes per day.</p> <p>The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.</p>
The site	
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. The plan is included in the permit.

Aspect considered	Decision
	See key issues.
Site condition report	<p>The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports.</p> <p>The applicant has used the July 2010 Permit Surrender Site Condition Report from the previous operator of the site (Invista) as evidence of the current site condition. As there is evidence of historic contamination we have advised the applicant that they should consider establishing a current baseline themselves to prove, in the future, that they have not caused this contamination.</p>
Biodiversity, heritage, landscape and nature conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process.</p> <p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified.</p> <p>See key issues section.</p> <p>We have not consulted Natural England on the application but have sent them our assessment for information only. The decision was taken in accordance with our guidance.</p>
Environmental risk assessment	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment, all emissions may be categorised as environmentally insignificant</p> <p>See key issues</p>
Operating techniques	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.</p> <p>The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p>
Permit conditions	
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions.

Aspect considered	Decision
	See Key Issues above.
Emission limits	<p>ELVs have been set for the following substances.</p> <p>Emissions to Air:: Particulates, Oxides of nitrogen (as NO₂),, Sulphur dioxide, Hydrogen Chloride, Volatile Organic Compounds (VOCs).</p> <p>Emissions to Sewer: Total Fluoride (as NaF), Total Barium (as BaCl₂), Total Aluminium(as AlCl₃), Total Sulphate (as CaSO₄)</p> <p>These are the substances declared in the consent from the sewerage contractor Sembcorp that are not included in Sembcorp's own discharge to the River Tees. Barium, Aluminium, and Sulphate have not been assessed independently for eventual environmental impact so the limits set reflect the Peak Technology Metals consent to Sembcorp (which is subject to review). The Fluoride limit is calculated from the maximum allowable effective volume flux in the worst case scenario assessed in the application.</p> <p>See key issues above.</p>
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.</p> <p>These monitoring requirements have been imposed in order to ensure the emissions from the installation do not exceed the assessment of the modelling tin the application.</p> <p>We made these decisions in accordance with our guidance The Inorganic Chemicals Sector (EPR 4.03) and our monitoring guidance M2 and M18.</p> <p>Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.</p>
Reporting	<p>We have specified reporting in the permit.</p> <p>The quarterly sampling and analysis must be reported annually.</p>
Operator competence	
Management system	<p>There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.</p> <p>The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.</p>
Relevant convictions	<p>The Case Management System has been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.</p>
Financial competence	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.</p>

Aspect considered	Decision
Growth Duty	
<p>Section 108 Deregulation Act 2015 – Growth duty</p>	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>

Consultation

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from
Redcar and Cleveland Borough Council Environmental Health Department
Brief summary of issues raised
The Authority is not currently dealing with any noise issues from the proposed installation site, but would like it to be noted that as a general rule the Authority is seeking that there is no increase in the ambient noise environment around the Wilton International facility from that which currently exists.
Summary of actions taken or show how this has been covered
<p>The standard permit condition 3.4.1 also requires that '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 the Environment Agency, 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.'</p> <p>The applicant has submitted a noise risk assessment and management plan as part of Appendix D to the application which is referenced in the permit Operating Techniques Table.</p> <p>This includes a commitment to perform all refining process activities inside buildings, to fit all external machinery with effective silencers where possible and to only use them in normal operating hours and to switch them off when not in regular use.</p> <p>Although ensuring absolutely no increase in ambient noise is not possible we are satisfied that the proposed measures for this installation will ensure there is no noticeable increase above background noise beyond the boundary of the facility.</p>

Representations from individual members of the public.

Brief summary of issues raised
The responder expressed concerns about how we will ensure there will be no danger to public health from dangerous minerals in the rare earth processing facility.
Summary of actions taken or show how this has been covered
We have assessed the applicant's proposals, including requesting further information about containment of stored materials and the composition of the sewer discharge to the larger Wilton site's effluent treatment facility and we are satisfied that the proposals, supported by conditions in the permit, will ensure that there is no danger to public health from operation of the installation.