

# Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

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Tata Steel UK Limited

Shapfell Lime Works

Shapfell Limestone Quarries

Shap

Penrith

Cumbria

CA10 3QG

**Variation application number**

EPR/BK0787IZ/V003

**Permit number**

ERR/BK0787IZ

# Shapfell Lime Works

## Permit number EPR/BK0787IZ

### Introductory note

#### **This introductory note does not form a part of the notice.**

Under the Environmental Permitting (England & Wales) Regulations 2010 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

#### **Brief description of the changes introduced by this variation notice:**

This is an Environment Agency initiated variation and consolidation – consolidating previous variations of environmental permit EPR/BK0787IZ. This variation incorporates a number of changes as a result of:-

- a statutory review of permits in the Cement and Lime sector
- the incorporation of legislative changes following the publication of “Best Available Techniques (BAT) conclusions” for the production of cement, lime and magnesium oxide – published 9<sup>th</sup> April 2013.

As part of the permit review we have considered an application for derogations from the operator. This related to BAT Conclusions 43. Where we have granted a derogation, that derogation and the reasons for granting it, are also included in Annex 1 to the variation notice to the permit, as required by Article 15(4) of the IED.

#### **Brief description of the process:**

Shapfell Lime Works (the Installation) is operated by Tata Steel UK Limited and is located at grid reference NY5716013400 south-east of the village of Shap, Cumbria.

The main activity taking place at the Installation is the production of lime, which is a listed activity in the ‘The Environmental Permitting (England and Wales) Regulations 2010’:

Section 3.1 Part A (1) (b) Producing lime or magnesium oxide in kilns or other furnaces with a production capacity of more than 50 tonnes per day.

The main purpose of the activities at the installation is the manufacture of lime and lime products from locally produced limestone. Production capacity when all four kilns are in operation is around 436,800 tonnes of lime per annum.

The installation includes

- The quarry and associated activities except blasting. The extent of the quarry is as defined by the present planning consent.
- All raw material preparation, crushing, screening, washing, conveying and storage.
- Four parallel flow regenerative kilns (PFRK) for the manufacture of soft burned lime.
- The manufacture of Ground Burnt Lime (GBL); BOS Lime (lump lime); and Fine Lime Products.
- Product storage and despatch.
- Discharge to controlled waters.

#### **Quarry operations**

The quarry is one mile east of the plant. Rock is removed by drilling and blasting although these activities are not within the scope of this permit. The stone produced becomes raw material for the installation and its initial storage and transport by dumper trucks along internal roads to the crushing plant is included within the permit.

Stone is also imported mainly from a local quarry for use as raw material to supplement the stone from the onsite quarry. The imported stone can be used in combination with the stone quarried on site or as 100% of the feedstock to the kilns.

### **Raw Materials and Materials Handling**

**Crushing and Screening:** Stone is fed on to a grizzly screen and a primary jaw crusher, where it is crushed and screened. The undersize is returned to the restoration area of the quarry. Oversize goes on for secondary crushing and screening prior to the stone being conveyed to an outdoor stockpile. The undersize from the secondary crushing is conveyed to three tertiary crushers to produce limestone product whilst the oversize goes to a stockpile ready for the washing plant.

**Limestone Washing Plant:** Stone is conveyed to a rotary trommel scrubber, washed with water that discharges to a double deck screen. Washing residues are returned to the restoration area of the quarry. Washed oversize from the primary screen is conveyed to a size screen, separating stone into required size range for feeding into kiln surge hoppers

### **Lime production**

The plant has a total capacity of around 436,800 tonnes of lime per annum. This capacity is reduced at the moment by 600 tonnes per day as Kiln 2 and Kiln 4 are currently mothballed. If Kiln 2 or Kiln 4 are restarted it will have to comply with the full requirements of the BAT Conclusions except if covered by derogation request. Kilns 1, 2 and 4 are two shaft Parallel Flow Regenerative Kilns (PFRK) and Kiln 3 is a three shaft PFRK.

**Lime Kilns:** A skip hoist carries the skips of stone to the top of the kiln. The stone is charged into the kiln when the shaft is depressurised during gas reversal. Limestone (calcium carbonate) is heated using natural gas fuel to above 1000°C in four vertical-shaft Maerz kilns. Carbon dioxide is driven off to produce lime (calcium oxide). The lime product is moved continually through the kilns on to a discharge table (during gas reversal) and then onto conveyors for transfer to the Lime Processing Plant.

**Lime Processing:** The burnt lime from the kilns is crushed and graded into a variety of product sizes, which include; Ground Burnt Lime (GBL); BOS Lime (lump lime); and Fine Lime Products. Each product has its own enclosed bunker. BOS Lime can be despatched by road wagon or rail wagon; GBL and Fine Lime by road tanker only.

### **Emissions**

**Emissions to Air:** The main emissions from the installation are oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), carbon monoxide (CO) and particulate matter (PM) from the kilns during the calcination of the limestone. Each kiln has an independent exhaust stack 44m high. All kilns use wet scrubbers for abatement but Kilns 3 and 4 additionally utilise venturi scrubbers to improve particulate abatement. Particulates are also emitted from the tertiary crushers and the Lime Processing Plant that utilise fabric filters.

**Emissions to Water:** Surface waters from the kiln site and the quarry and associated haul road are collected and discharged to a local beck via settlement lagoons.

There are two sensitive receptors within 10km; Asby Complex (SAC) and Crosby Ravensworth Fell (SSSI) and river Eden and Tributaries (SAC).

The Installation has gained ISO14001:2004 accreditation under the Tata Steel Strip Products UK main Certificate.

The schedules specify the changes made to the permit.

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

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application EPR/BK0787IZ/A001	Duly made 10/08/01	Additional Information Received, 23/01/02
EPR/BK0787IZ	05/09/02	Permit determined
EPR/BK0787IZ/V002	22/07/10	Environment Agency Cement and Lime Sector Review Variation determined
Change of company name	19/10/10	Changes to permit to reflect change in company name.
Regulation 60 Notice issued	07/08/14	Notice requiring information in relation to a permit review initiated by the publication of BATC April 2013
Regulation 60 Notice response received	06/01/15	Additional information was also received on 02/10/15, 19/01/16, 01/03/16, 25/05/16.
Variation EPR/BK0787IZ/V003 (PAS billing reference NP3133AU)	Effective date 06/04/2017	Environment Agency initiated variation following the Cement and Lime Sector Review

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

### Permit number

**EPR/BK0787IZ**

### Issued to

**Tata Steel UK Limited** (“the operator”)

whose registered office is

**30 Millbank**

**London**

**SW1P 4WY**

company registration number 02280000

to operate a regulated facility at

**Shapfell Lime Works**

**Shapfell Limestone Quarries**

**Shap**

**Penrith**

**Cumbria**

**CA10 3QG**

to the extent set out in the schedules.

The notice shall take effect from 06/04/2017

Name	Date
SIMON HEWITT	06/04/2017

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2010

### Permit number

**ERR/BK0787IZ**

This is the consolidated permit referred to in the variation and consolidation notice for Environment Agency led variation EPR/BK0787IZ/V003 authorising,

**Tata Steel UK Limited** (“the operator”),

whose registered office is

**30 Millbank**

**London**

**SW1P 4WY**

company registration number 02280000

to operate an installation at

**Shapfell Lime Works**

**Shapfell Limestone Quarries**

**Shap**

**Penrith**

**Cumbria**

**CA10 3QG**

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

<b>Name</b>	<b>Date</b>
<b>SIMON HEWITT</b>	<b>06/04/2017</b>

Authorised on behalf of the Environment Agency

# Conditions

## 1 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.

### 1.2 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 green on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

2.3.1 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 the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency 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 the Environment Agency.

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 the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency 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 Where a substance is specified in schedule 3 table S3.2 or S3.3 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.
- 3.1.4 Total annual emissions from the emission points set out in schedule 3 tables S3.1, S3.2 and S3.3 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.
- 3.1.5 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 the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency 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 the Environment Agency.
- 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 the Environment Agency, 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 the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency 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 the Environment Agency.

### **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 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.

The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency 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 the Environment Agency.

## **3.5 Monitoring**

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1, S3.2 and S3.3
- (b) process monitoring specified in table S3.4

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 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

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 the Environment Agency.

## **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 the Environment Agency, 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 the Environment Agency.

## 4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) 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 the Environment Agency, 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 the Environment Agency, 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 the Environment Agency 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.

## 4.3 Notifications

- 4.3.1 In the event:
- (a) 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 the Environment Agency,
    - (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) of a breach of any permit condition the operator must immediately—
    - (i) inform the Environment Agency, and
    - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
  - (c) 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 the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency 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.
- 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) the Environment Agency 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 The Environment Agency 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, the Environment Agency 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 "immediately", in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
AR1-AR4	Section 3.1 Part A(1)(b)	Producing lime on 4 parallel flow regenerative (PFRK) lime kilns with a production capacity of more than 50 tonnes per day	From kiln feed stockpile through screening and feed of limestone into kilns along with fuel, through to intermediate storage of quicklime product prior to further processing or despatch by road, and associated releases to air from stacks and process vents.
<b>Directly Associated Activity</b>			
AR5	Raw materials preparation conveying and storage	Crushing and screening of limestone and its storage in hoppers and in emergency stockpile.	Crushing and screening of limestone and its storage in hoppers and in emergency stockpile.
AR6	Lime processing	Crushing, grading, storage and despatch of lime products	Receipt of lime from kilns to despatch of lime products
AR7	Product storage and despatch	Storage of product in silos and subsequent loading into mobile tankers	Storage of product in silos and subsequent loading into mobile tankers
AR8	Water discharge to controlled water	Management of site drainage and process water.	From collection of surface water drainage including reuse within site activities through to discharge to controlled waters via settlement lagoons.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application for PPC permit	The response to question 2.3 given in section 2.3 of the application	10/08/01
Response to PPC Schedule 4 Notice dated 14/11/01	Response to questions 3 to 5	23/01/01
Response to Regulation 60(1) Notice dated 07/08/2014 requiring information	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 2, 30, 31, 33, 34, 35, 36, 37, 38, 39, 44, 45, 46, 47, 48, 49, 51, 53, 54.,	Received 06/01/15
	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 1, 32, 40, 41, 42, 50, 52	Received 02/10/15
	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 43	Received 01/03/16

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC7	<p>The operator shall undertake a review of the baseline report (as provided in response to our Regulation 60 Notice issued), and submit a report to the Environment Agency for approval in writing. The review shall include the at least the following:-</p> <ul style="list-style-type: none"> <li>• Reference to historical spillages, the chemicals involved and locations so as to inform and supplement existing location of chemicals and storage tanks.</li> <li>• Reference made to EQS's as opposed to ICRL criteria for assessing contamination, specifically "Industrial emissions Directive Draft EPR Guidance on Part A installations.' Dated March 2011 by DEFRA which gives guidance in section 5.8 - 5.13 on baseline reports, and Annex 3 that indicates the EQS's required for assessment.</li> </ul> <p>Where the review establishes that additional baseline data is required, the operator shall provide details of the data to be collected (to ensure that all areas containing potential hazardous substances are assessed) together with a proposed date for submission of an updated baseline report. Any updated baseline report shall include a monitoring plan (for the testing of soil every 10 years and groundwater every 5 years) in consideration of condition 3.1.5 of this permit unless demonstration can be made that this is not required.</p>	30/11/17
IC8	<p>The operator will establish a programme of enhanced testing of particulate releases on kiln 1 and 4 (as agreed in writing with the EA) to establish criteria for optimal performance with the aim to minimise releases below a level of 20mg/Nm<sup>3</sup>. The programme will include sampling a minimum of 4 times per year for two years on kilns 1 and 4.</p>	31/06/17
IC9	<p>The operator shall provide a report summarising an investigation into the factors affecting the uncertainty of TOC measurements from PFRK kilns. The investigation shall consider the practical application of the relevant standard when dealing with cyclical process associated with PFRK operation. Where appropriate, the operator may undertake stack sampling outside normal compliance testing to further the investigation. The final report may suggest adjustments to the method to ensure uncertainties can be minimised.</p>	31/07/17

Previously completed improvement conditions are listed in the associated decision document for information.

## Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
None specified	-



## Schedule 3 – Emissions and monitoring

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1, A2, A3, A4	Kilns stacks 1,2,3,4	Particulate matter	50 mg/m <sup>3</sup>	Average value over sampling period of at least 1 hour.	6 monthly	BS EN 13284-1
			From 9 April 2017 Kiln 1 <sup>(1)</sup> - 30 mg/Nm <sup>3</sup> Kiln 2 - 20 mg/Nm <sup>3</sup> Kiln 3 - 20 mg/Nm <sup>3</sup> Kiln 4- 30 mg/Nm <sup>3</sup>		Kiln 1 – quarterly Kiln 2 – 6 monthly Kiln 3 – 6 monthly Kiln 4 - quarterly	
A1, A2, A3, A4	Kilns stacks 1,2,3,4	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	100 mg/m <sup>3</sup>	Average value over sampling period of at least 1 hour.	6 monthly	BS EN 14792
		Sulphur dioxide	300 mg/m <sup>3</sup>		6 monthly	EN 14791
			From 9 April 2017 200 mg/Nm <sup>3</sup>			
		Carbon monoxide	50 mg/m <sup>3</sup>	Average value over sampling period of at least 1 hour.	6 monthly	BS EN 15058
		Total Organic Carbon (TOC)	From 9 April 2017 30 mg/Nm <sup>3</sup>	Average value over sampling period of at least 1 hour.	Annual	EN 12619
Dioxins and Furans PCDD/F I-TEQ/Nm <sup>3</sup>	From 9 April 2017 0.1 ng PCDD/F I-teq/Nm <sup>3</sup>	Average value over sampling period (6-8 hours)	Annual	BS EN 1948 Parts 1, 2 & 3 or as agreed in writing with the EA.		

(1) Kiln 1 tighter limit will apply following the introduction of venturi scrubbers at the next kiln shutdown after the 9 April 2017.

**Table S3.2 Point source emissions to air – emission limits and monitoring requirements for non-kiln sources**

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
A5	Tertiary Crushers Extraction System	Particulate matter	30 mg/m <sup>3</sup>	Averaged over the sampling period of at least half an hour.	6 monthly	BS EN 13284-1
			From 9 April 2017 10 mg/Nm <sup>3</sup>			
A6	Lime Handling Plant Extraction System	Particulate matter	30 mg/m <sup>3</sup>		6 monthly	BS EN 13284-1
			From 9 April 2017 10 mg/Nm <sup>3</sup>			
All other channelled dust emissions abated by fabric filters	Dusty operations including silos and loading filters	Particulate matter	From 9/4/2017 10 mg/Nm <sup>3</sup>	-	In accordance with maintenance management system	Permanent sampling access not required

**Table S3.3 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 at grid ref. NY 5685 1355 prior to entry into Force beck	Surface water drainage from kiln site via settlement lagoons	Suspended Solids	60 mg/l	Composite sample comprising of daily spot samples	Weekly	BS EN 872
			No limit	Spot sample	Daily	
		Oil or Grease	None visible	Spot	Daily	Visual Check
		pH maximum	9	Spot sample	Daily	BS EN ISO 10523:2012
		pH minimum	5			
W2 at grid ref. NY 5799 1339 prior to entry into Force Beck	Surface water drainage from quarry and haul road via settlement lagoons	Suspended Solids	60 mg/l	Spot sample	Weekly	BS EN 872
		Oil or Grease	None Visible		Weekly	Visual check
		pH maximum	9	Spot sample	Weekly	BS EN ISO 10523:2012
		pH minimum	5			

<b>Table S3.4 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Kiln 1-4	Temperature	Continuous	Traceable to National Standards	

## Schedule 4 – Reporting

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

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3, A4, A5, A6 A5, A6	Quarterly extractive monitoring reported every 3 months	1 January, 1 April, 1 July, 1 Oct
		6 monthly extractive monitoring reported every 6 months	
		Annual extractive monitoring reported every 12 months	
Emissions to water Parameters as required by condition 3.5.1	W1, W2	6 monthly extractive monitoring reported every 6 months	1 January, 1 July

Parameter	Units
No Parameters set	

Parameter	Frequency of assessment	Units
No Parameters set		

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	April 2017
Water and Land	Form water 1 or other form as agreed in writing by the Environment Agency	April 2017

# 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	<b>EPR/BK0787IZ</b>
Name of operator	<b>Tata Steel UK Limited</b>
Location of Facility	<b>Shapfell Lime works</b>
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
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>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
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

*“abatement equipment”* means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

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

*“annually”* means once every year.

*“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 the Environment Agency 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.

*“Climate Change Agreement”* means an agreement made between the Secretary of State and the operator, either directly or through the offices of any association of which he is a member, in which he agrees to secure energy efficiency improvements as set out in a plan agreed with the Secretary of State in that agreement in return for a discount from the amount he would otherwise pay as a Climate Change Levy.

*“dioxin and furans”* means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

*“ELV”* means emission limit value.

*“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.

*“emissions to land”* includes emissions to groundwater.

*“EP Regulations”* means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

*“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”* or *“IED”* means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

*“ISO”* means International Standards Organisation.

*“Lime”* also called *“quicklime”* or *“burned lime”* is calcium oxide (CaO) produced by the decarbonisation of limestone (CaCO<sub>3</sub>).

*“MCERTS”* means the Environment Agency’s Monitoring Certification Scheme.

*“monitoring”* includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.

*“oxides of nitrogen (NO<sub>x</sub>)”* means nitric oxide (NO) plus nitrogen dioxide (NO<sub>2</sub>) expressed as NO<sub>2</sub>

*“permitted installation”* means the activities and the limits to those activities described in Table S1.1 of this Permit.

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

*“quarterly periodic monitoring”* for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

*“six monthly periodic monitoring”* means periodic monitoring in each 6 month period (January-June & July – December) with at least 4 months between sampling dates.

*“SSSI”* means a site of special scientific interest designated under the Wildlife and Countryside Act 1981 being a site in the UK which is of particular importance because of its geology, topography, or ecology.

“TOC” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC.

“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:

- in relation to emissions from lime kilns, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry for all fuels;
- in relation to emissions from combustion processes from other sources, 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; and
- in relation to emissions from non-combustion sources, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with no correction required for oxygen; and
- in relation to emissions from lime hydrating plants, the concentration at a temperature of 273k, at a pressure of 101.3 kPa and with no correction required for oxygen or water vapour.

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing.

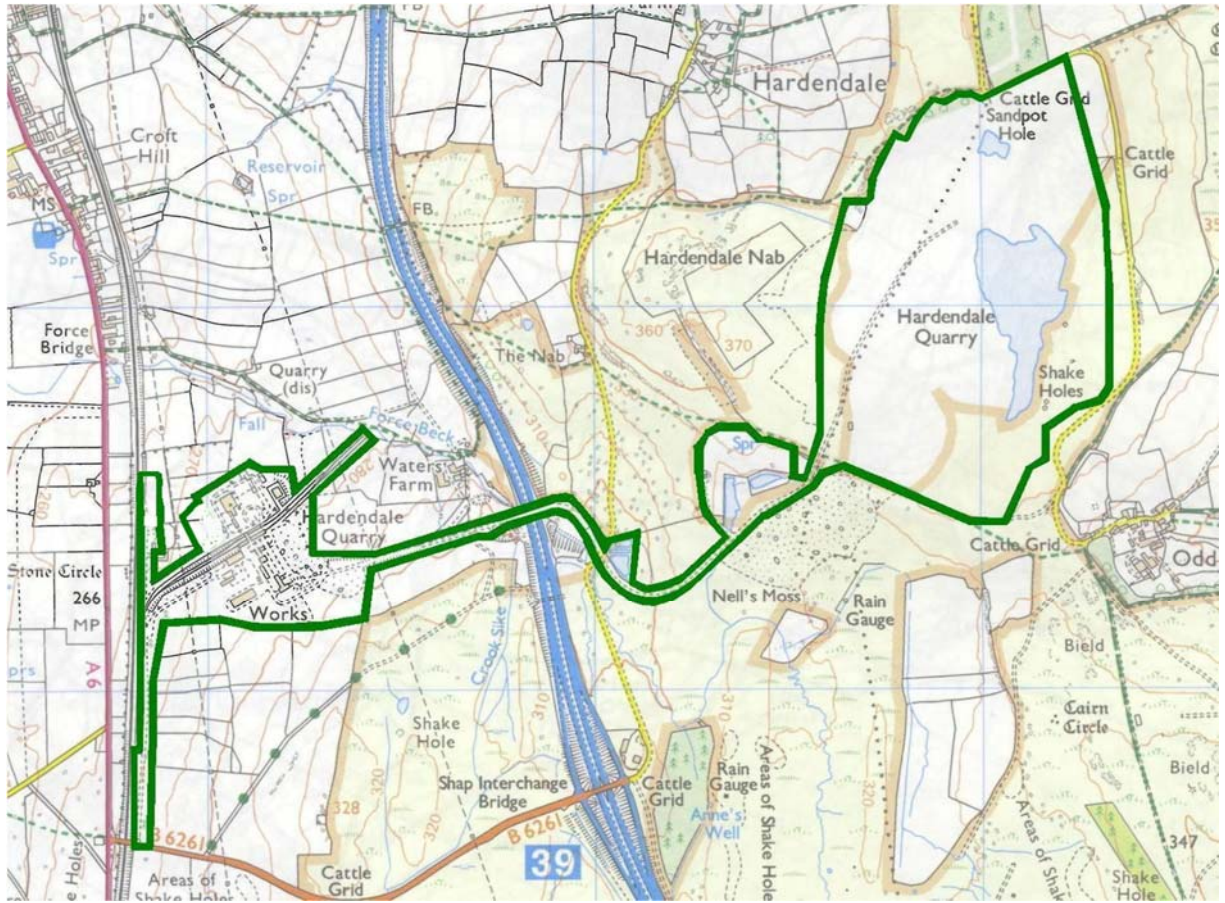
TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
		Humans / Mammals	Fish	Birds
<b>Dioxins</b>				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
<b>Furans</b>				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.3	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0003	0.0001	0.0001

TEF schemes for dioxin-like PCBs		
Congener	WHO-TEF	
	2005	1997/8



TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
		Humans / mammals	Fish	Birds
<b>Non-ortho PCBs</b>				
3,4,4',5-TCB (81)		0.0001	0.0005	0.1
3,3',4,4'-TCB (77)		0.0003	0.0001	0.05
3,3',4,4',5 - PeCB (126)		0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)		0.03	0.00005	0.001
<b>Mono-ortho PCBs</b>				
2,3,3',4,4'-PeCB (105)		0.00003	<0.000005	0.0001
2,3,4,4',5-PeCB (114)		0.00003	<0.000005	0.0001
2,3',4,4',5-PeCB (118)		0.00003	<0.000005	0.00001
2',3,4,4',5-PeCB (123)		0.00003	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)		0.00003	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)		0.00003	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)		0.00003	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)		0.00003	<0.000005	0.00001

Schedule 7 – Site plan



END OF PERMIT

# Annex to conditions – Derogation under Industrial Emissions Directive

Derogation under Article 15(4) of Industrial Emissions Directive

## Directive 2010/75/EU of the European parliament and of the council of 24 November 2010 on industrial emissions.

The Operator requested a long term derogation from BAT 43, for Kilns 1, 3 and 4 which sets a Best Available Technique – Associated Emission Level (BAT-AEL) for particulate matter (PM) at <math>20 \text{ mg/Nm}^3</math> for a lime Kiln wet dust separator, as the daily average or average over the sampling period (spot measurements for at least half an hour). The basis for the request was the technical characteristics of the plant (specifically the recent history of pollution control investment). The operator requested that the ELV be set at  $40 \text{ mg/Nm}^3$ .

In their application the operator considered 6 options for meeting the BAT AEL. They have proposed to implement the ongoing use of venturi scrubbers on all Kilns 1, 3 and 4 and rejected all the other options.

The Environment Agency has reviewed the application and concluded

- That the application is based on the technical characteristics of the plant (specifically the recent history of pollution control investment) and this is considered within the scope of derogations allowed under article 15(4) of the Industrial Emissions Directive. This decision is based on the evidence provided showing the fitting of venturi scrubbers on Kilns 3 and 4. The BAT Conclusions for Cement, Lime and Magnesium Oxide (CLM) identifies the utilisation of venturi scrubbers are appropriate for this industry.
- The request for a derogation for Kiln 3 has been rejected on the basis that the historical emissions monitoring data does not support the claim that the kiln, when using venturi scrubbers) cannot achieve the BATAEL by April 2017.
- That the operator has provided a credible argument that the increased costs for achieving the BAT AEL are linked to the technical characteristics. The operator showed that alternative techniques, such as bag filters, would be inappropriate due to costs at this installation compared to the proposed solution of venturi scrubbers. The venturi scrubbers can provide BATAEL levels of protection for Kiln 3 but for Kilns 1 and 4 further optimisation is required as achieving the BATAEL appears subject to Kiln design and operating conditions.
- That the operator has demonstrated that the costs of achieving the BAT AEL by April 2017 are disproportionate to the environmental benefits. The current ELVs provide a high level of environmental protection with the impact of particulate releases considered insignificant. Tightening the Emission Limit Values (ELV) further to  $20 \text{ mg/Nm}^3$  for Kiln 3 and  $30 \text{ mg/Nm}^3$  for Kilns 1 and 4 will ensure ongoing environmental protection. The extra costs linked to the utilisation of bag filtration systems compared to the benefits were assessed and considered disproportionate.

The Environment Agency is therefore minded to allow this derogation request subject to the following conditions.

- Kiln 3 - ELV will be set at the BATAEL level of  $20 \text{ mg/Nm}^3$
- Kilns 1 and 4 - the ELV will be set at  $30 \text{ mg/Nm}^3$
- *An improvement condition based on the following:*

*The operator shall establish a programme of enhanced testing of particulate releases on kiln 1 and 4 (as agreed in writing with the EA) to establish criteria for optimal performance to minimise release below a level of  $20 \text{ mg/Nm}^3$ .<sup>3</sup> The programme shall include sampling a minimum of 4 times per year for two years on kilns 1 and 4.*