

# Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

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Singleton Birch Limited  
Melton Ross Lime Works  
Melton Ross Quarries  
Barnetby  
North Lincolnshire  
DN38 6AE

**Variation application number**

EPR/BL8805IZ/V011

**Permit number**

EPR/BL8805IZ

# Melton Ross Lime Works

## Permit number EPR/BL8805IZ

### Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2016 (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 and 2 of the notice specifies the conditions that have been varied. Schedule 3 of the notice specifies Environment Agency initiated changes (including updates to emission limit values). Schedule 4 of the notice comprises a consolidated permit which reflects the variations being made.

Only the variations specified in schedule 1 and 2 are subject to a right of appeal.

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

The operator has applied to make the following changes:-

- Install a new hydrator vessel (Hydrator 4) including stack and emission control system. This will serve existing Hydrator 2 post - hydration plant.  
*Hydrator 2 reaction vessel to be retained for stand-by / backup operations only.*
- Amend existing activity (AR11, Table S1.1) relating to Aqualime production, by:-
  - Use of calcium oxide for production of Low Solids Aqualime.
  - Pilot plant trial of upto 3000 tonnes (120 loads) by manual batch process for the production of High Solids Aqualime
- Construction and operation of an additional lagoon (to serve existing AD plant operations).

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

Melton Ross Lime Works (the installation) is operated by Singleton Birch Limited and is located at grid reference TA 0843 1134, about 1km North East of the town of Melton Ross, close to Barnetby Le Wold in North Lincolnshire.

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

Section 3.1 Part A(1) (b) Producing lime or magnesium oxide in kilns 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 chalk. Production capacity for the 4 parallel Flow Regenerative Kilns (PFRK) is around 300,000 tonnes of quicklime 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, conveying and storage.
- Four parallel flow regenerative kilns (PFRK) for the manufacture of quicklime.
- The manufacture of slaked lime, microlime, graded lime and aqualime.
- Innovo Plant for production of special lime products with additives.
- Product storage and despatch.
- Anaerobic Digester producing electricity for the lime works
- Discharge to controlled water

## Quarry operations

Chalk is extracted in the adjacent quarry workings. Following blasting, chalk is passed through several crushing and screening processes in the quarry before being transferred to the lime works by conveyor belt. The chalk is conveyed to storage hoppers, which hold two to three days supply for the kilns. There is also an outside emergency 10,000 tonne stockpile of kiln stone.

## Raw Materials and Materials Handling

Operations for processing materials are carried out on a continuous twenty-four hour basis for seven days per week, whilst raw materials are quarried typically for up to twelve hours per day, seven days per week.

## Lime production

The site has four natural gas fired lime kilns all of similar design, known as parallel flow regenerative kilns (PFRK), and they are located together. Each kiln has a nominal thermal input of 15 MWth and has a product rating of 300 tonnes per day of burnt lime. These kilns can also calcine Dolomitic lime where the raw material is imported to the site from Dolomitic quarries.

There are normally no process wastes streams from the kilns. A small quantity of engineering waste and spoil is generated from their periodic re-bricking.

## Other lime products

**Microlime** is manufactured by milling quicklime to a fine powder in two pendulum-roller mills.

There are no releases to controlled waters from the Microlime process.

**Graded Lime.** Granular and fine grades of quicklime are produced in the Graded Lime plant. This process has a hammer mill and a roller crusher, which combined with two large multi-deck screens can be used to make various grades and quantities of lime. These graded products can also be blended with additives such as fly ash, Dolomet and fluorspar in this process plant.

**Hydrated Lime.** Quicklime is also converted to hydrated lime. Annual production is in the order of 60,000 tonnes per annum. There are three hydrators at Melton Ross site, No.2 Hydrator, No.3 Hydrator and No.4 Hydrator

**Aqualime.** Aqualime products are suspensions of hydrated lime in water or calcium oxide in water. These are produced by mixing either hydrated lime or calcium oxide with water in a vessel to produce liquid limes of various concentrations.

**Hydrate Bagging Plant.** There is a hydrate bagging operation where hydrated lime is packaged into valve sacks. This product is then shrink wrapped onto pallets.

**Burnt Lime Bagging.** Various grades of burnt lime are bagged into big bags and paper sacks.

**Emission to air.** The main emissions from the installation are particulate matter (PM), oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>) and carbon monoxide (CO) from the kilns during the calcination of the limestone. The gases from each of the four kilns pass through individual multi cascade wet scrubber systems for dust abatement. The exhaust gas is directed through several curtains of water where the water and particles mix. The scrubbers discharge to atmosphere 44m above ground level with a characteristic vapour plume which is a combination of moisture driven from the limestone feed to the process and evaporation from the wet scrubber itself. The scrubbers operate on a pumped, closed circuit with large settling tanks from which the settled solids are removed to landfill. The circulating flow is continuously monitored. Mains water is used to make up evaporative losses from the circuit.

Particulates are also emitted from the other lime processing plant including fabric filters associated with microlime manufacture, hydrators and other grading plant. The two Microlime mill systems are fitted with cyclones to remove product from the air stream, which carries the powered lime around the milling process. A bag filter unit is incorporated before the air is vented to atmosphere. The abatement plant differential pressure is continuously monitored to give warning of filter problems. The bag filters discharge to atmosphere 26m above ground level. Dolomet (magnesium oxide) is also milled in the Microlime plant. Both hydrators are fitted with Pulse Jet Fabric Filters to control emissions of particulate matter.

**Emissions to water:** There are no releases to controlled waters from the lime making process.

**Anaerobic Digester plant**

The installation includes an Anaerobic Digestion (AD) plant processing non-hazardous waste and agricultural crops. The AD plant is classified as a Schedule 1 listed activity due to the quantity of waste and non-waste feedstock being permitted up to 200 tonnes per day. The resultant biogas is feed into 8 combined heat and power (CHP) units to generate electricity to be used by the operator for the operation of the lime manufacturing process. Excess electricity will be fed back to the national grid. The operator procures the feedstock from a co-operative of local farmers. During the digestion process 80 percent of the solid matter of the feedstock is converted to either gas or liquid. Any liquid and solid digestate produced from the AD will be stored in a covered lagoon (directly associated activity) and periodically removed by farmers to spread to land for agricultural benefit.

**Mining waste operation**

A mining waste operation is included in the permit. Extractive wastes are stored and then used to backfill the excavation void.

The installation operates with an environmental management system which has been certified as conforming to ISO14001. An area of Special Scientific Interest (SSSI) Kimmington pits is within 2km of the installation.

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 received EPR/BL8805IZ/A001	Duly made 31/08/2001	
Permit determined EPR/BL8805IZ	22/08/2002	Permit issued to Singleton Birch Limited
Variation Application EPR/BL8805IZ/V002	Duly made 22/05/2003	
Variation determined EPR/BL8805IZ/V002	05/08/2003	
Variation Application EPR/BL8805IZ/V003	Duly made 17/12/2009	
Variation determined EPR/BL8805IZ/V003	21/01/2010	
Cement and Lime sector Review Variation determined EPR/BL8805IZ/V004	18/08/2010	Variation and consolidation.
Variation Application EPR/BL8805IZ/V005	Duly made 04/10/2011	
Variation determined EPR/BL8805IZ/V005	31/10/2011	
Variation Application EPR/BL8805IZ/V006	Duly made 21/03/2014	Addition of an anaerobic digestion facility and five combined heat band power (CHP) combustion units for the use of resultant biogas.
Variation determined EPR/BL8805IZ/V006	12/05/2014	

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Variation Application EPR/BL8805IZ/V007	Duly made 18/08/2014	Addition of sixth CHP unit, digestate drier, slurry tank. Glycol tank and purpose grown crops as a new raw material.
Response to request for further information	09/10/2014	Revised H1 emissions to air risk assessment. Updated odour management plan, email detailing responses to questions and updated emissions to air plan "EA Layout"
Variation determined EPR/BL8805IZ/V007 PAS/Billing Ref: LP3039WF	31/10/2014	Varied permit issued.
Variation Application EPR/BL8805IZ/V0118	Duly made 01/05/2015	Addition of third digestate tank, upgrade of digestate drier and addition of CHP Units Numbers 7 & 8.
Request for further information	03/07/2015	Revised plant layout drawing showing corrected emission points to air for upgraded AD plant and equipment.
Variation determined EPR/BL8805IZ/V008	23/07/2015	Varied permit issued.
Variation Application EPR/BL8805IZ/V0119	22/01/2016	Increase in feedstock to 200tpd to the Anaerobic Digestion Plant.
Variation determined EPR/BL8805IZ/V009	13/04/2016	Varied permit issued.
Permit review Regulation 60 notice issued	07/08/2014	Notice requiring information in relation to a permit review initiated by the publication of BATC April 2013
Regulation 60 Notice response received	06/01/2015	Operator response to Reg 60 notice
Request for additional information	22/05/2015	Request for additional information to support permit review
Additional information from operator	02/10/2015	Additional response to Regulation 60 Notice received on 03/07/15, 02/11/16 and 03/1/16
Variation determined EPR/BL8805IZ/V010	04/04/2017	Agency initiated variation following the Cement and Lime Sector permit review
Variation application EPR/BL8805IZ/V011	Duly made 16/12/2020	Request for new hydrator vessel (Hydrator 4), amendments to Aqualime production, and additional AD lagoon.
Variation determined EPR/BL8805IZ/V011 (PAS billing reference WP3800LX)	22/01/2021	

End of introductory note

# Notice of variation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

### Permit number

EPR/BL8805IZ

### Issued to

**Singleton Birch Limited** (“the operator”)

whose registered office is

**Melton Ross Quarries**

**Barnetby**

**North Lincolnshire**

**DN38 6AE**

company registration number 00009433

to operate a regulated facility at

**Melton Ross Lime Works**

**Melton Ross Quarries**

**Barnetby**

**North Lincolnshire**

**DN38 6AE**

to the extent set out in the schedules.

The notice shall take effect from 22/01/2021.

Name	Date
Anne Lloyd	22/01/2021

Authorised on behalf of the Environment Agency

## Schedule 1 - conditions to be added

The following conditions are added as a result of the application made by the operator:

- We have added condition 2.5 to this permit in reflection of pre-operational conditions table being added as S1.4
- Table S1.4 – We have included the following pre-operational condition.

Reference	Pre-operational measures
1	<p>At least two weeks prior to commissioning the new AD plant lagoon, the operator shall submit a written report demonstrating that works have been completed in accordance with the requirements of the Construction Quality Assurance (CQA) plan – including lagoon lining and permanent leak detection systems.</p> <p>The report shall also confirm compliance with SSAFO regulations [<i>The Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations 2010</i>].</p> <p>The report shall seek written agreement from the Environment Agency prior to commencing operations within the lagoon.</p>

## Schedule 2 - conditions to be amended

The following conditions are amended as a result of the application made by the operator:

- Table S1.1 – We have carried out the following changes:-
  - We have added Directly Associated Activity AR7 for digestate storage, to reflect the existing lagoon and new lagoon. *The storage of digestate (lagoon) is a DAA to the AD activity (AR6) and was previously missed from this table. We have performed this amendment alongside application for new lagoon.*
  - We have numbered sequential activities accordingly as AR8 – AR14.
  - We have amended 'production of aqualime' activity (now AR11) to refer to:-
    - Low Solids Aqualime plant to enable use of calcium oxide as alternative to hydrated lime.
    - High Solids Aqualime – a batch process pilot plant trial up to 3000 tonnes (120 loads).

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types
	<b>Directly Associated Activity</b>		
AR7	Digestate storage R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	[Associated to activity AR6] Liquid and solid digestate produced from the AD operation will be stored in a covered lagoon and periodically removed by farmers to spread to land for agricultural benefit	From the receipt of processed uncertified digestate produced from the on-site anaerobic digestion process to despatch for use off-site. Storage of processed uncertified liquid digestate in 2 lagoons.

<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 and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
AR8	Raw materials preparation conveying and storage	Crushing and screening of chalk and its storage in hoppers and in emergency stockpile.	Crushing and screening of chalk and its storage in hoppers and in emergency stockpile.
AR9	Production of microlime	The milling of lime and Dolomet	The operation of two roller pendulum milling systems
AR10	Production of graded lime	The milling, screening and blending of lime (including blending with paper sludge ash)	The operation of a hammer mill, rolls crusher and multi-deck screens
AR11	Production of aqualime	<u>Low Solids Aqualime</u> Mixing of hydrated lime or calcium oxide with water. Mixing of hydrated lime or calcium oxide with landfill leachate	Mixing of hydrated lime or calcium oxide with water. Mixing of hydrated lime or calcium oxide with landfill leachate
		<u>High Solids Aqualime</u> Trial for the manufacture of high solids aqualime through slaking	<u>Pilot plant trial</u> Operation of a manual, batch process up to 3000 tonnes (120 loads).
AR12	Product handling	Hydrate bagging and burnt lime bagging	Hydrate bagging and burnt lime bagging
AR13	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
	<b>Description of other non-listed activities</b>		<b>Limits of activities</b>
AR14	A mining waste operation for non-hazardous non-inert wastes		Permitted waste types shall conform to the description in the approved waste management plan.

- Table S1.2 – We have amended the operating techniques table to include reference to this application.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application for Variation EPR/BL8805IZ/V011	Application form C3 : Table 3 – Technical standards	Amended 16/12/2020
	Additional information:- - Digestate Covered Storage Lagoon Barnetby Engineering Specification	14/08/2020
	- Low solids Slaked Aqualime Non-Technical Summary	11/12/2020

- Table S1.3 – We have amended the improvement conditions table to include IC8 relating to this application.

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC8	The operator shall provide a written report to the Environment Agency detailing the dates of the pilot plant trial (High Solids Aqualime) together with a performance review from the trial (activity AR11, table S1.1).	01/08/2022



- Table S3.2 – We have amended point source emissions to air to include Hydrator 4 emission point, and renumbered sequential emission points. We have also removed expired emission limit values.

<b>Table S3.2 Point source emissions to air – emission limits and monitoring requirements for non-kiln sources</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A5 Hydrator 2, Hydrated lime plant Note 1	Particulate matter	Hydrated lime plant	10mg/m <sup>3</sup> Note 1	Averaged over the sampling period of at least half an hour.	6 monthly	BS EN 13284-1
A6 Hydrator 3, Hydrated lime plant 7			10mg/m <sup>3</sup>			
A7 Hydrator 4, Hydrated lime plant		Microlime plant				
A8 & A9 Microlime Plant			Silos, transfer points etc	-	-	In accordance with a maintenance management system
All other channelled dust emission points abated by fabric filters <10,000Nm <sup>3</sup> /hr						
A10, A11, A12, A13, A14, A15, A32 and A33. Stacks on CHP engines No.1 - 8 on site plan Note 2	Oxides of Nitrogen	Stacks on CHP biogas combustion engines	500 mg/m <sup>3</sup>	Averaged over the sampling period of at least half an hour.	Annual	MCERTS
	Carbon monoxide		1,400 mg/m <sup>3</sup>			
	Sulphur dioxide		350 mg/m <sup>3</sup>			
	Total VOC's including methane		1,000 mg/m <sup>3</sup>			
A16 Auxiliary Flare on site plan Note 2	Oxides of Nitrogen	Auxiliary flare	No limit set	--	--	Record of operating hours.
A17, A18, A19, A20, A30 and A31 Gas store on site plan Note 2	Biogas	Pressure relief valves		--	--	Weekly visual or remote monitoring to ensure valves are correctly seated.

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A21, A22, A23, A24, A25, A26 and A27 Digestate Drier on site plan <sup>Note 2</sup>	Particulate Matter	Digestate Drier	No limit set	--	--	--
	Ammonia					
A34 Glycerine Tank on site plan <sup>Note 2</sup>	No parameters	Glycerine Tank Vent				
A35 Slurry Tank on site plan <sup>Note 2</sup>		Slurry Tank Vent				

Note 1 Operation as standby hydrator only

Note 2 Phase 3 EA Layout' Issue 2 submitted 09/07/15

### Schedule 3 – conditions to be amended

The following conditions are amended as detailed, following an Environment Agency initiated variation

- Table S1.3 – We have updated improvement conditions timescales / marked where complete.

<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC5	The operator shall submit an updated site condition report to the Environment Agency, which provides a baseline report in line with the requirements of IED article 22(2). The revised report should: <ul style="list-style-type: none"> <li>• Include an updated Conceptual Site Model and Source Pathway Receptor assessment, provided within the PPC application site report;</li> <li>• Ensure intrusive investigation and sampling includes all potential hazardous substances at the site;</li> </ul> Include information on the concentrations in soil and groundwater of the hazardous substances used, produced or released by the installation.	Complete
IC6	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.	Complete
IC7	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.	Complete

- Table S3.1 – We have amended this table to remove any expired emission limit values, and to emission points A3 and A4 (to kiln3 and kiln4).

<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements for kiln exhaust(s)</b>						
<b>Emission point ref. &amp; location</b> <small>(note 2)</small>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b> <small>(note 1) (note 3)</small>
A1	Kiln 1	Particulate matter	100 mg/Nm <sup>3</sup> <small>(note 4)</small>	Averaged over the sampling period of at least one hour.	3 monthly	BS EN 13284-1
A2	Kiln 2					
A3	Kiln 3		20 mg/Nm <sup>3</sup>			
A4	Kiln 4					
A1, A2, A3 and A4	Kiln stack	Sulphur dioxide	50 mg/Nm <sup>3</sup>		6 monthly	BS EN 14791
A1, A2, A3 and A4	Kiln stack	Carbon monoxide				BS EN 15058
A1, A2, A3 and A4	Kiln stack	Oxides of Nitrogen				200 mg/Nm <sup>3</sup>
A1, A2, A3 and A4	Kiln stack	Total Organic Carbon (TOC)	30 mg/Nm <sup>3</sup>	Averaged over the sampling period of at least 6-8 hours	Annual	BS EN 126192
A1, A2, A3 and A4	Kiln stack	Dioxins and Furans PCDD/F I-TEQ/Nm <sup>3</sup>	0.1 ng/Nm <sup>3</sup>			BS EN 1948: Parts 1,2 and 3 or as agreed in writing with the Agency

- Note 1 Certification to the MCERTS performance standards indicates compliance with BS EN 15267-3
- Note 2 Location as defined on site plan in schedule 7
- Note 3 Alternative monitoring standard may be agreed in writing with the EA in accordance with condition 3.5.1
- Note 4 Subject to Derogation

- Table S4.1 – We have amended this table to update emission point references.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3, A4, A5, A6, A7, A8 and A9	Quarterly extractive monitoring reported every 3 months	1 January, 1 April, 1 July, 1 October
		6 monthly extractive monitoring reported every 6 months	
		Annual extractive monitoring reported every 12 months	
Emissions to air	A10, A11, A12, A13, A14, A15, A32 and A33	Annually	1 January

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Parameters as required by condition 3.5.1.			

- The following are amended within Schedule 6 Interpretation following the end of EU Exit transition period

“*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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“*Waste Framework Directive*” or “*WFD*” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

#### **Schedule 4 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/BL8805IZ**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BL8805IZ/V011 authorising,

**Singleton Birch Limited** (“the operator”),

whose registered office is

**Melton Ross Quarries**

**Barnetby**

**North Lincolnshire**

**DN38 6AE**

company registration number 00009433

to operate an installation at

**Melton Ross Lime Works**

**Melton Ross Quarries**

**Barnetby**

**North Lincolnshire**

**DN38 6AE**

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

<b>Name</b>	<b>Date</b>
<b>Anne Lloyd</b>	<b>22/01/2021</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.

2.3.6 Waste shall only be accepted if:

- (a) It is of a type and quantity listed in schedule 2 table S2.2; and
- (b) It conforms to the description in the documentation supplied by the producer and holder.

2.3.7 The operator shall review the waste management plan every five years from the date of initial approval

### **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.

## **2.5 Pre-operational conditions**

- 2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4A have been completed.

## **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 and S3.2.
- 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 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 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.
- 3.4.2 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 and S3.2
- 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 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 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 performance parameters set out in schedule 4 table S4.2 using the forms specified in table S4.3 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 S4.3 ; 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 and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
AR1-AR4	S3.1 Part A1(b)(i)	Producing lime in four parallel flow regenerative PFRK lime kilns each 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.
AR5	S3.1 Part B(c)	Slaking lime for the purpose of making calcium hydroxide or calcium magnesium hydroxide	The hydration of lime in two hydrators
AR6	S5.4 Part A1(b)(i) R13: Storage of wastes pending the operations numbered R1, R3 and D10 R3: Recycling or reclamation of organic substances that are not used as solvents R1: Use principally as a fuel or other means to generate energy.	Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 100 tonnes per day by anaerobic digestion involving biological treatment and excluding activities covered by Council Directive 91/271/EEC.	Digestion of purpose grown crops Digestion of wastes including pasteurisation and chemical addition. Gas cleaning and upgrading to bio-methane. Gas storage and drying. Combustion of biogas produced in eight Combined Heat and Power Gas Engine Units developing a total of 2MWe and 2.2MWth. Treatment of digestate including screening to remove plastic residues, centrifuge or pressing, addition of thickening agents (polymers) and drying. Composting and maturation of digestate. The maximum throughput of animal wastes shall be no more than 10 tonnes per day [excluding manures and slurries]. The total quantity of waste or a combination of waste and non-waste including solids and liquids accepted at the site shall not exceed 200 tonnes in any one day. Burning of biogas in gas engines, gas turbines, boilers and use in fuel cells. Use of an auxiliary flare required only for short periods of breakdown or maintenance of facility. Use of pressure release valves to protect the integrity of the plant. Such systems should not be used routinely to vent unburned biogas..

<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 and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
	<b>Directly Associated Activity</b>		
AR7	Digestate storage R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	[Associated to activity AR6] Liquid and solid digestate produced from the AD operation will be stored in a covered lagoon and periodically removed by farmers to spread to land for agricultural benefit	From the receipt of processed uncertified digestate produced from the on-site anaerobic digestion process to despatch for use off-site. Storage of processed uncertified liquid digestate in xx storage tank(s) or xx lagoon(s). Storage of processed uncertified solid digestate in xx covered bay(s) or xx building(s) and on an impermeable surface with a sealed drainage system.
AR8	Raw materials preparation conveying and storage	Crushing and screening of chalk and its storage in hoppers and in emergency stockpile.	Crushing and screening of chalk and its storage in hoppers and in emergency stockpile.
AR9	Production of microlime	The milling of lime and Dolomet	The operation of two roller pendulum milling systems
AR10	Production of graded lime	The milling, screening and blending of lime (including blending with paper sludge ash)	The operation of a hammer mill, rolls crusher and multi-deck screens
AR11	Production of aqualime	<u>Low Solids Aqualime</u> Mixing of hydrated lime or calcium oxide with water. Mixing of hydrated lime or calcium oxide with landfill leachate	Mixing of hydrated lime or calcium oxide with water. Mixing of hydrated lime or calcium oxide with landfill leachate
		<u>High Solids Aqualime</u> Trial for the manufacture of high solids aqualime through slaking	<u>Pilot plant trial</u> Operation of a manual, batch process up to 3000 tonnes (120 loads).
AR12	Product handling	Hydrate bagging and burnt lime bagging	Hydrate bagging and burnt lime bagging
AR13	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
	<b>Description of other non-listed activities</b>		<b>Limits of activities</b>
AR14	A mining waste operation for non-hazardous non-inert wastes		Permitted waste types shall conform to the description in the approved waste management plan.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to questions B2.3 given in section B2.3 of the application document	31/08/2001

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Letter dated 22/08/2002	The addition of milling dolomet (magnesium oxide) in the Microlime plant	22/08/2002
Application for a Standard variation	Document Reference Number LFP 1 of the Application.	22/05/2003
Application for Variation EPR/BL8805IZ/V003	All sections relating to operating techniques for the calcination of dolomitic limestone	17/12/2009
Application for Variation EPR/BL8805IZ/V005 Application for Variation EPR/BL8805IZ/V006	The response to question 3a of application form C3; Non technical summary; Document detailing the process using paper sludge ash; Waste Management Plan; Response to questions 4c and 4d of application form part C5.	04/10/2011
	Parts C2 and C3 of the application forms and all associated documents. Response to not duly made letter: Thermal capacity for the CHP units, revised H1 assessment, site drain plan, technical information on the anaerobic digestion facility.	21/03/2014
Application for Variation EPR/BL8805IZ/V006	Email from operator responding to request for further information regarding the odour management plan and technical information on the AD process.	09/04/2014
Application for Variation EPR/BL8805IZ/V006	Email received from operator confirming compliance with requirements of standard rules SR2012 No12 other than the storage of the waste.	11/04/2014
Application for Variation EPR/BL8805IZ/V006	Revised plan showing air emission points reference 'EA 01'	14/04/2014
Application for Variation EPR/BL8805IZ/V007	Parts C2 and C3 of the application documents and all associated documents.	18/08/2014
Application for Variation Response to request for information EPR/BL8805IZ/V007	Revised H1 emissions to air risk assessment, updated odour management plan, email detailing responses to questions, updated emissions to air plan 'EA Layout'.	09/10/2014
Application for Variation EPR/BL8805IZ/V008	Parts C2 and C3 of the application documents and all associated documents.	01/05/2015
Application for Variation EPR/BL8805IZ/V009	Parts C2 and C3 of the application documents and all associated documents.	22/01/2016
Response to Regulation 60(1) Notice dated 30/04/14 requiring information	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 30, 31, 34, 35, 36, 40, 43, 44, 45, 46, 47, 48, 49, 51, 53 and 54.	08/01/2015
	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 32, 33, 37, 38, 39, 41, 42, 50, and 52	03/07/2015
Application for Variation EPR/BL8805IZ/V011	Application form C3 : Table 3 – Technical standards Additional information:- - Digestate Covered Storage Lagoon Barnetby Engineering Specification Low solids Slaked Aqualime Non-Technical Summary	Amended 16/12/2020 14/08/2020 11/12/2020

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC5	<p>The operator shall submit an updated site condition report to the Environment Agency, which provides a baseline report in line with the requirements of IED article 22(2).</p> <p>The revised report should:</p> <ul style="list-style-type: none"> <li>• Include an updated Conceptual Site Model and Source Pathway Receptor assessment, provided within the PPC application site report;</li> <li>• Ensure intrusive investigation and sampling includes all potential hazardous substances at the site;</li> </ul> <p>Include information on the concentrations in soil and groundwater of the hazardous substances used, produced or released by the installation.</p>	Complete
IC6	<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>	Complete
IC7	<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>	Complete
IC8	<p>The operator shall provide a written report to the Environment Agency detailing the dates of the pilot plant trial (High Solids Aqualime) together with a performance review from the trial (activity AR11, table S1.1).</p>	01/08/2022

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
1	<p>At least two weeks prior to commissioning the new AD plant lagoon, the operator shall submit a written report demonstrating that works have been completed in accordance with the requirements of the Construction Quality Assurance (CQA) plan – including lagoon lining and permanent leak detection systems.</p> <p>The report shall also confirm compliance with SSAFO regulations [<i>The Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations 2010</i>].</p> <p>The report shall seek written agreement from the Environment Agency prior to commencing operations within the lagoon.</p>

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

<b>Raw materials and fuel description</b>	<b>Specification</b>
Paper Sludge Ash	Meets the requirement of the Paper Sludge Ash Quality Protocol
Vegetable matter	Substantially free of non-vegetable matter
Maize silage	Substantially free of non-vegetable matter
Purpose grown crops	Substantially free of non-vegetable matter

<b>Maximum quantity</b>	<p>Annual throughput of waste shall not exceed 21,000 tonnes.</p> <p>Maximum storage capacity of any one waste at any one time 28 tonnes.</p> <p>Waste will not be stored for any period longer than 14 days from receipt of waste.</p>
<b>Waste code</b>	<b>Description</b>
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 01	sludges from washing and cleaning
02 01 03	plant-tissue waste
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site



## Schedule 3 – Emissions and monitoring

Emission point ref. & location (note 2)	Source	Parameter	Limit (including unit) (note 4)	Reference period	Monitoring frequency	Monitoring standard or method (note 1) (note 3)
A1	Kiln 1	Particulate matter	100 mg/Nm <sup>3</sup> (note 4)	Averaged over the sampling period of at least one hour.	3 monthly	BS EN 13284-1
A2	Kiln 2		20 mg/Nm <sup>3</sup>			
A3	Kiln 3					
A4	Kiln 4					
A1, A2, A3 and A4	Kiln stack	Sulphur dioxide	50 mg/Nm <sup>3</sup>	Averaged over the sampling period of at least 6-8 hours	6 monthly	BS EN 14791
		Carbon monoxide				BS EN 15058
		Oxides of Nitrogen				200 mg/Nm <sup>3</sup>
		Total Organic Carbon (TOC)	30 mg/Nm <sup>3</sup>		BS EN 126192	
		Dioxins and Furans PCDD/F I-TEQ/Nm <sup>3</sup>	From 09/04/2017 0.1 ng/Nm <sup>3</sup>		Annual	BS EN 1948: Parts 1,2 and 3 or as agreed in writing with the Agency

Note 1 Certification to the MCERTS performance standards indicates compliance with BS EN 15267-3

Note 2 Location as defined on site plan in schedule 7

Note 3 Alternative monitoring standard may be agreed in writing with the EA in accordance with condition 3.5.1

Note 4 Subject to Derogation

<b>Table S3.2 Point source emissions to air – emission limits and monitoring requirements for non-kiln sources</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A5 Hydrator 2, Hydrated lime plant Note 1	Particulate matter Particulate matter	Hydrated lime plant	10mg/m <sup>3</sup> Note 1	Averaged over the sampling period of at least half an hour.	6 monthly	BS EN 13284-1
A6 Hydrator 3, Hydrated lime plant 7			10mg/m <sup>3</sup>			
A7 Hydrator 4, Hydrated lime plant		Microlime plant				
A8 & A9 Microlime Plant			Silos, transfer points etc	-	-	In accordance with a maintenance management system
All other channelled dust emission points abated by fabric filters <10,000Nm <sup>3</sup> /hr						
A10, A11, A12, A13, A14, A15, A32 and A33. Stacks on CHP engines No.1 - 8 on site plan Note 2	Oxides of Nitrogen	Stacks on CHP biogas combustion engines	500 mg/m <sup>3</sup>	Averaged over the sampling period of at least half an hour.	Annual	MCERTS
	Carbon monoxide		1,400 mg/m <sup>3</sup>		Annual	MCERTS
	Sulphur dioxide		350 mg/m <sup>3</sup>		Annual	MCERTS
	Total volatile organic compounds including methane		1,000 mg/m <sup>3</sup>		Annual	MCERTS
A16 Auxiliary Flare on site plan Note 2	Oxides of Nitrogen	Auxiliary flare	No limit set	--	--	Record of operating hours.
A17, A18, A19, A20, A30 and A31 Gas store on site plan Note 2	Biogas	Pressure relief valves		--	--	Weekly visual or remote monitoring to ensure valves are correctly seated.

<b>Table S3.2 Point source emissions to air – emission limits and monitoring requirements for non-kiln sources</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A21, A22, A23, A24, A25, A26 and A27 Digestate Drier on site plan Note 2	Particulate Matter	Digestate Drier	No limit set	--	--	--
	Ammonia					
A34 Glycerine Tank on site plan Note 2	No parameters	Glycerine Tank Vent				
A35 Slurry Tank on site plan Note 2		Slurry Tank Vent	--	--	--	

Note 1 Operation as standby hydrator only

Note 2 Phase 3 EA Layout' Issue 2 submitted 09/07/15

## Schedule 4 – Reporting

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

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3, A4, A5, A6, A7, A8 and A9	Quarterly extractive monitoring reported every 3 months	1 January, 1 April, 1 July, 1 October
		6 monthly extractive monitoring reported every 6 months	
		Annual extractive monitoring reported every 12 months	
Emissions to air Parameters as required by condition 3.5.1.	A10, A11, A12, A13, A14, A15, A32 and A33	Annually	1 January

<b>Table S4.2 Performance parameters</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Nil		

<b>Table S4.3 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Air	Form air 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>BL8805IZ</b>
Name of operator	<b>Singleton Birch Limited</b>
Location of Facility	<b>Melton Ross 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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“*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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“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, no correction is required for temperature, pressure, oxygen or water vapour content.

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.

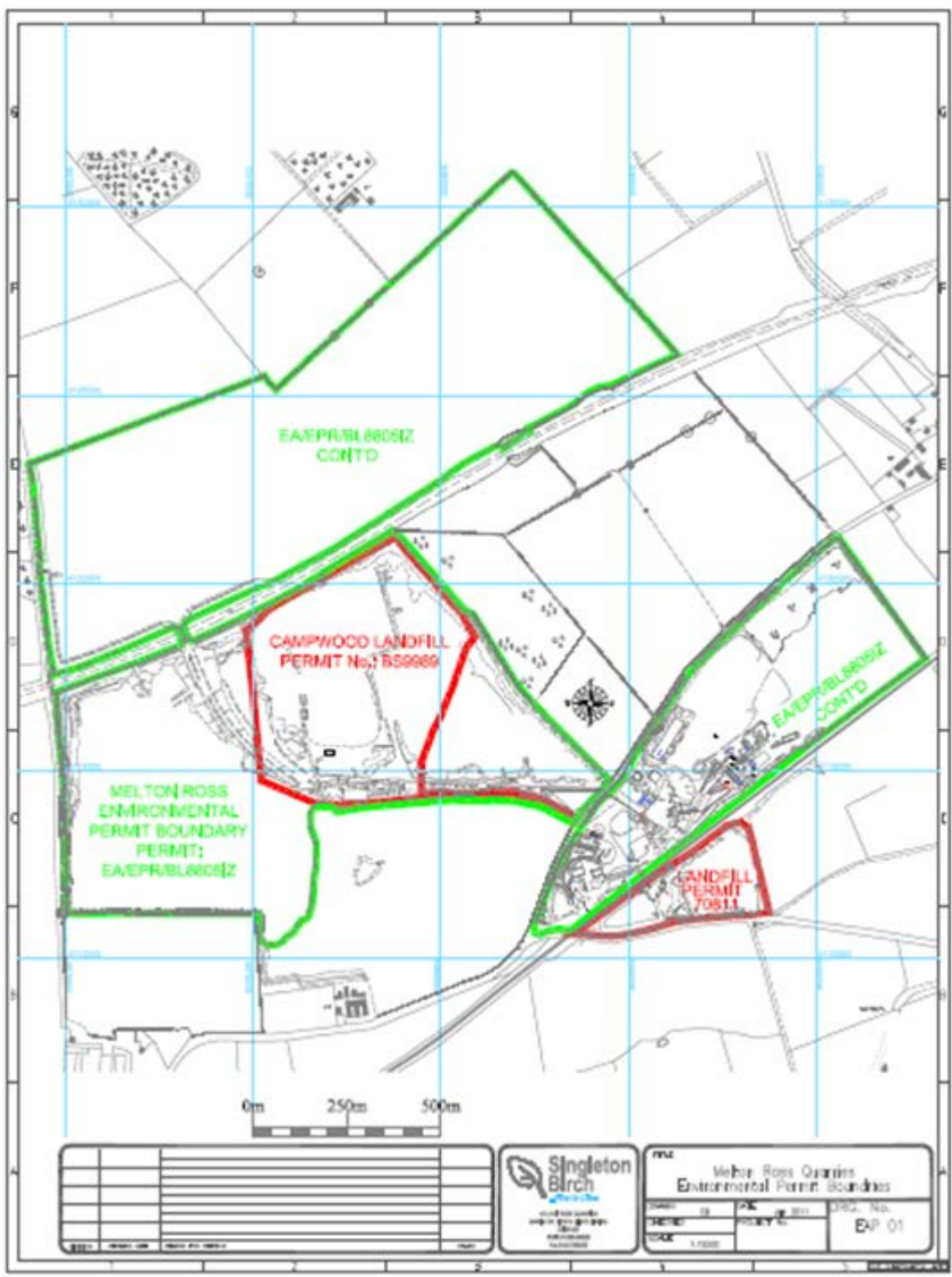
TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
		Humans / Mammals	Fish	Birds
<b>Dioxins</b>				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	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



TEF schemes for dioxins and furans				
Congener	I-TEF	WHO-TEF		
	1990	2005	1997/8	
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	
	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 time limited derogation from BAT 43, Dust emissions from kilns firing processes as detailed in the BAT Conclusions for the manufacture of cement, lime and magnesium oxide. The derogation request was made on the basis of geographical location and technical characteristics of the installation, specifically the influence of the raw materials (chalk) and the requirement to await the normal kiln shutdown dates to fit venturi scrubbers.

The Operator's application considered 4 options for meeting the BAT-AEL. They have proposed to implement fitting of venturi scrubbers to all kilns by 2020 to achieve the BAT-AEL limits.

The Environment Agency has reviewed the application and concluded

- The operator has supplied a valid derogation request against the BAT conclusions 43. The derogation request identified a valid technical criteria linked to the date when venturi scrubbers to the kilns 1, 2, and 4 as well as the impacts of the geographical location of the installation and how it relates to the raw materials. Fitting is only viable when the kilns are shut down as part of their normal production cycle but would be completed by December 2020 when the installation will be fully compliant with the BAT-AEL. The operator has described 4 relevant options for achieving the BAT-AEL and did not screen out any options and all were taken forward to conduct a cost benefit analysis.
- That the operator has demonstrated that the costs of achieving the BAT-AEL by April 2017 are disproportionate to the environmental benefits. The derogation request is to delay compliance with the BAT-AEL while the operator installs install venturi scrubbers on kilns 1, 2 and 4 by December 2020. The environmental impacts (estimated at 18 tonnes PM10 over 4 years) as a result of this decision are not considered significant. The current process contribution from the kilns is modelled at 22% of the Short term Environmental Standard and this would drop to 12% as a result of the proposed derogation. The environmental receptors, including SSSI, are unlikely to be affected by this decision.
- The proposed derogation, timescale and associated ELV's have been accepted in principle. However, as the venturi scrubbers are fitted the ELV's would move to the BAT-AEL level of 20mg/Nm<sup>3</sup>. The exception to this is kiln 3 where the ELV would be 40mg/Nm<sup>3</sup> would be granted until December 2018. This will provide time to complete optimisation of the venturi scrubber on this kiln. An additional improvement condition has been place on the permit that increases the frequency of testing subsequent to the fitting of venturi scrubbers ELV's. This improvement condition allows for optimisation of the venturi scrubbers to increase abatement efficiency.

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

- Upon fitting of venturi scrubbers to kiln 1, 2, and 4 the ELV will be set at 20mg/Nm<sup>3</sup>
- The ELV for particulate for kiln 3 will be reduced to 20mg/Nm<sup>3</sup> by December 2018.
- Improvement condition: - "The operator shall undertake an investigation to establish the parameters that affect the abatement performance of the venturi scrubbers. Testing will be conducted 4 times in the first year after installation of the venturi scrubber to gather additional test results. A report shall be provided to the Environment Agency summarising the findings."
- Increase sampling from twice per year to four times per year after venturi scrubbers are fitted.