Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Minteq UK Limited

Specialty Minerals Lifford
Lifford Lane
Kings Norton
Birmingham
B30 3JW

Variation number

EPR/BJ9819IR/V005

Permit number

EPR/BJ9819IR

Minteq UK Limited
Permit number EPR/BJ9819IR

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/BJ9819IR. 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 April 2013.

Brief description of the process:

Specialty Minerals Lifford (the Installation) is operated by Minteq UK limited and is located at grid reference SP05707960, Lifford, near Kings Norton, Birmingham. The installation is on Lifford Lane, which is in a suburb of Birmingham and has a large number of residential areas within the 10km radius.

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 with a production capacity of more than 50 tonnes per day.

Specialty Minerals Lifford manufacture high purity granular calcium oxide and precipitated calcium carbonate (PCC), which is supplied for use in the food, pharmaceutical and healthcare markets.

The installation operates continually throughout the year and has a design capacity of 43,000 tonnes/annum of PCC.

The installation includes:

- Imported limestone handling, crushing, washing and screening operations
- All associated lime manufacturing, handling, grinding and storage activities
- Production of hydrated lime and milk of lime
- Process and surface water drainage and treatment, and discharge to controlled water

Raw Materials Preparation and Handling

The primary raw material feed is imported limestone (calcium carbonate) which is calcined in the lime kiln to produce calcium oxide (quicklime). The operator does not carry out quarrying operations, they purchase limestone from a single supplier. To ensure consistent feed stone size and to remove any organic matter going into the kiln, the limestone feedstock is screened as it exits from the holding silo to ensure it is within the optimum size of 75 – 125mm. Any undersized material is returned to the quarry for other uses.

Lime production

The manufacturing process utilises a multi-chamber vertical shaft kiln, defined in the BATc as “Other Kiln” (OK), which is fired on natural gas only. Gas oil is stored on site as a standby fuel, only for use in the event that the natural gas supply is disrupted.

Production of slaked lime involves the addition of water in a slaker which is then pumped into one of four precipitators which operate in pairs. Here, the kiln gases are first compressed and injected into the Precipitator through a gas sparge-pipe, where the carbon dioxide gas is absorbed into the calcium hydroxide slurry to form the Precipitated Calcium Carbonate (PCC). The PCC is dried and packed as uncoated PCC; or transferred to the coated product plant where it is treated with sodium stearate solution before it is dried and packed.

Emissions

Emissions to air. The main releases to air come from the lime manufacturing process. The kiln gases (which naturally rise to the top of the kiln) are piped through a heat exchanger and a water scrubber tower, to cool the gas down and remove particulates, before being compressed for re-injection into the Precipitators. The precipitators vent to atmosphere via emission point A7. Primary emissions to air are particulates (PM), Oxides of Nitrogen (NOx) and Carbon monoxide (CO) The precipitators operate back to back and therefore the untreated waste gas only goes to atmosphere through the emission stack for approximately 20 hours per annum when unplanned breakdowns occur.

Emissions to water. Other activities include an effluent treatment plant. The plant treats wastewater from the process by the addition of a flocculent followed by settlement and filtration of solids. The water is pH adjusted by the addition of sulphuric acid before passing to a final settlement lagoon and then, provided that emission limits can be met, into the nearby River Rea. The solid filter cake is taken off-site to be used as a soil conditioner on agricultural land. The water being discharged to the river is continuously monitored and if it approaches the emission limits set in this permit, is automatically diverted to the foul sewer. Rainwater that falls onto the site is diverted into a large holding tank from where, after analysis and according to its quality, it is either released directly to the river, to the sewer or to the effluent treatment plant. Untreated rainwater from roof runoff is discharged directly to the Stratford upon Avon Canal.

There are no SSSI or RAMSAR sites within 10km of the installation, however there are a large number of residential properties.

Specialty Minerals Lifford operate a Certified Environmental Management System (EMS) which is accredited to ISO14001

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.

Status log of the permit		
Description	**Date**	**Comments**
Application for Permit BJ9819IR (EPR/BJ9819IR/A001)	Duly made 13/06/01	Application with amended table B1.1; maps management structure and responsibilities supplied.
Permit EPR/BJ9819IR Determined	05/06/03	
Application for variation EPR/BJ9819IR/V002	Duly made 28/02/06	
Variation Notice EPR/BJ9819IR/V002 issued	17/05/06	Variation determined

Status log of the permit		
Description	**Date**	**Comments**
Variation Notice EPR/BJ9819IR/V003 issued	18/06/07	Section 17(1) variation determined
Variation Notice EPR/BJ9819IR/V004 issued	05/07/10	Agency initiated variation following the Cement and Lime Sector permit review 2010
Issue of Regulation 60 Notice	01/05/2014	Statutory review of the sector Regulation 60 Notice Issued
Agency initiated Variation (EPR/BJ9819IR/V005)	02/01/2015	Regulation 60 Notice response received for permit review
Additional Information	Received 03/07/2015	Additional Response to Regulation 60 Notice for permit review
Variation EPR/BJ9819IR/V005 determined PAS charging number (KP3337WC)	Issued 04/04/2017	Agency initiated variation following the Cement and Lime sector permit review. Effective date 04/04/2017

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/BJ9819IR

Issued to

Minteq UK Limited ("the operator")

whose registered office is

The Broadgate Tower Third Floor
20 Primrose Street
London
EC2A 2RS

company registration number 02123886

to operate a regulated facility

Specialty Minerals Lifford
Lifford Lane
Kings Norton
Birmingham
B30 3JW

to the extent set out in the schedules.

The notice shall take effect from 04/04/2017

Name	Date
SIMON HEWITT	**04/04/2017**

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

EPR/BJ9819IR

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BJ9819IR/V005 authorising,

Minteq UK Limited ("the operator"),

whose registered office is

The Broadgate Tower Third Floor
20 Primrose Street
London
EC2A 2RS

company registration number 02123886

to operate an installation at

Specialty Minerals Lifford
Lifford Lane
Kings Norton
Birmingham
B30 3JW

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

Name	Date
SIMON HEWITT	**04/04/2017**

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, S3.3 and S3.4.

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 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, S3.2, and S3.3;

(b) emissions to sewer in table S3.4;

(c) process monitoring specified in table 3.5

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, S3.3 and S3.4 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.

4.3 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

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	Section 3.1 Part A(1)(b)	Producing lime in a single vertical multi chamber shaft kiln with a production capacity of more than 50 tonnes per day	From limestone storage through screening and feed of feed stone into the kiln 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.
AR2	Section 3.1 Part B(c)	Slaking lime for the purpose of making calcium hydroxide	From lime silos through slaking of lime with water in a hydrator, to transfer of slaked lime to the precipitators. Also includes the slaking of waste lime from the crusher house.
AR3	Section 4.2 Part A(1)(a) (iv)	Producing inorganic chemicals such as salts (calcium carbonate)	From intermediate storage of slaked lime through the batch manufacture of pre calcium carbonate (PCC) in precipitators and the coating of CC with sodium stearate through to product storage, packing and dispatch via road. Includes the pre-preparation of sodium stearate solution and all associated releases to air.
Directly Associated Activity			
AR4	Raw material receipt and storage	Bulk Limestone receipt and storage in bunkers	Receipt via road transport to delivery to kiln Offloading of limestone from road transport, through to intermediate storage
AR5	Lime Processing	Crushing, grading, storage and transfer of lime products.	From intermediate storage of lime through crushing and grading to product storage in silos. Receipt of lime from kiln to transfer to lime silos.
AR6	Lime and PCC Storage and Tanker loading	Intermediate product storage and handling; product handling and despatch	Lime Silos, PCC Silos, Warehouse. From lime and PCC product storage through to despatch by road.
AR7	Fuel Oil Storage and Handling	Backup fuel for kiln and boiler house	From delivery point to fuel oil tanks, to transfer to boiler and Kiln
AR8	Gas and Oil burning boilers	Burning fuel to raise steam for process	Boiler House Area and associated pipelines
AR9	Discharge to controlled water and sewer.	Collection and treatment of process and site water then discharge to controlled water or sewer.	Collection from site and process followed by flocculants treatment and settlement in lagoon. pH adjustment if needed followed by discharge to controlled waters (River Rea) at discharge points W1 and W2 or diversion to Severn

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
			Trent Water sewer undertaker via discharge S1.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/BJ9819IR/A001	The response to question 2.3 given in section B2.3 pages 1-30 and figures 2.3A to 2.3J.	04/06/2001
Response to Schedule 4 Part 1 Notice	Response to questions 29 and 37	10/01/2002
Application Variation VP3535LC (EPR/BJ9819IR/V002)	Sections C2.2 and C3.1	09/02/06, 15/05/06 and 17/05/06
Response to Regulation 60(1) Notice dated 01/05/2014 requiring information	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 1, 2, 30 – 54	02/01/15
	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 32, 33, 41, 47, 50 and 52.	03/07/15

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC3	The operator shall review (and submit if changed) 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: • Include an updated Conceptual Site Model and Source Pathway Receptor assessment, provided within the PPC application site report; • Ensure intrusive investigation and sampling includes all potential hazardous substances at the site; Include information on the concentrations in soil and groundwater of the hazardous substances used, produced or released by the installation.	1 November 2017

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Fuel oil	Sulphur content 0.1% by weight (w/w)

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements for kiln exhausts						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Main Kiln pressure relief vent[1]	-	No limit set	-	-	
A7 (a) A7 (c)	Main Kiln vents from stirred batch precipitator Tanks EG1132 – EG1133 bypass vent and EG1134-EG1135 bypass vent	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	400 mg/Nm^3	Average value over sampling period of at least ½ hour	6 monthly	BS EN 14792
			From 9/4/2017 350 mg/Nm^3			
		Particulate matter	20 mg/Nm^3			BS EN 13284-1
		Carbon monoxide	From 9/4/2017 500 mg/Nm^3			BS EN 15058
		Dioxins and Furans PCDD/F I-TEQ/Nm^3	From 9/4/2017 0.1 ng/Nm^3	Average value over sampling period (6-8 hours)	Annual	BS EN 1948 or as agreed in writing with the EA
		Sulphur dioxide	From 9/4/2017 50 mg/Nm^3	As agreed in writing with EA	Annual	As agreed in writing with EA

Note 1: The main kiln pressure release vent is only used in exceptional circumstances

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**
A8	Spinflash drier filter bag unit	Particulate matter	50mg/Nm^3 From 9/4/2017 10mg/Nm^3	Average value over sampling period of at least ½ hour	Annual	BS EN 13284-1
A18	Plant E3A drier fabric bag filter unit		30mg/Nm^3 From 9/4/2017 10mg/Nm^3	Average value over sampling period of at least ½ hour	Annual	BS EN 13284-1
A12	E3 Plant drier bag filter unit vent		30 mg/Nm^3 From 9/4/2017 10mg/Nm^3	-	In accordance with a maintenance management system	Permanent sampling access not required
A13	E3 Plant NAIRB mill bag filter unit vent		30 mg/Nm^3 From 9/4/2017 10mg/Nm^3			
A19	Plant 5 CU / MM bag filter unit vent		30 mg/Nm^3 From 9/4/2017 10mg/Nm^3			
A20	Plant E3A NAIRB mill bag filter unit vent		30 mg/Nm^3 From 9/4/2017 10mg/Nm^3			
All other channelled dust emissions abated by fabric filters	Dusty operations including silos and loading filters		From 9/4/2017 10mg/Nm^3		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	Overflow pipe from settlement pond and discharge to river	Suspended Solids	30 mg/l	98% of 8 minute averages within any 12 month period shall meet this limit subject to a maximum of 75 mg/l	Continuous	MCERTS certification of continuous analyser for the appropriate parameters
		Max Temperature	32^{o}C			
		pH min	6			BS6068-2.50
		pH max	9			BS6068-2.50
		Flow rate	30 l/s			MCERTS for the self monitoring of effluent flow
		Oil or Grease	None Visible		Daily spot	
W2 Rainwater to Stratford upon Avon Canal	Rainwater from warehouse roof	Oil or Grease	None Visible	-	Daily visual inspection	

Table S3.4 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1 on site plan in schedule 7.	Discharge from settlement lagoon and storm water tank	Suspended solids	1000 mg/l	Daily spot	When a discharge is occurring and has been continuous for more than 2 hours	BS EN 872:2005
		COD	600 mg/l			BS6068-2.34:1988
		pH min	6			SCA bluebook 14 ISBN 0117514284
		pH max	11			
		Temperature	Max 43 ^{o}C			MCERTS
		Oil	Free from physically separable oil			None visible

Table S3.5 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Kiln 1	Temperature	Continuous		
	Pressure	Continuous		
A8 and A18	Particulate	Indicative particulate monitoring		

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air Parameters as required by condition 3.5.1.	A7a and A7c, A8, A18	6 monthly extractive monitoring reported every 6 months Annual extractive monitoring reported every 12 months	1 January, 1 July
Emissions to water Parameters as required by condition 3.5.1	W1	Every 6 months	1 January, 1 July

Table S4.2 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Operation of kiln emergency emission point	Annual	hours

Table S4.3 Reporting forms		
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	EPR/BJ9819IR
Name of operator	Minteq UK Limited
Location of Facility	Specialty Minerals Lifford, Kings Norton, Birmingham, B30 3JW
Time and date of the detection	

(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	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

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

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

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

"*CEM"* means Continuous Emission Monitor.

"*CEN"* means Commité Européen de Normalisation.

"*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 ($CaCO_3$).

"Lime products" is a term which covers quicklime and slaked lime.

"*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_x)*" means nitric oxide (NO) plus nitrogen dioxide (NO_2) expressed as NO_2

"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.

"Slaked lime" is produced by reacting or 'slaking' quicklime with water and consists mainly of calcium hydroxide ($Ca(OH)_2$). Slaked lime includes hydrated lime (dry calcium hydroxide powder) and milk of lime (dispersion of calcium hydroxide particles in water).

"*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.

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

"year" means calendar year ending 31 December.

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

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

(a) in relation to emissions from 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;

(b) 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

(c) 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

(d) in relation to emissions from lime hydrating plants, no correction is required for temperature, pressure, oxygen or water vapour content.

For dioxins/furans 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**
Dioxins				
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	-	-
Furans				
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

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
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	
	Humans / mammals	Fish	Birds
Non-ortho PCBs			
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
Mono-ortho PCBs			
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