Notice of variation and consolidation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Oldbury Chemical Works

Rhodia UK Limited
PO Box 80
Trinity Street
Oldbury
West Midlands
B69 4LN

Variation and consolidation notice number
EPR/SP3339BL/V007

Permit number
EPR/SP3339BL

Oldbury Chemical Works
Permit number EPR/SP3339BL

Introductory note

This introductory note does not form a part of the permit

This notice is to advise you of the variation of environmental permits *A* and B referred to in the status logs below and the replacement of those permits with a consolidated environmental permit.

Oldbury Chemical Works is a multi-operator installation. A recent partial transfer application resulted in the operational control of one of the buildings within the installation (the polyphosphoric acid plant) being transferred from Thermphos UK Limited to Rhodia UK Limited. This partial transfer resulted in a new permit for Rhodia UK Limited (EPR/VP3533HM). This variation serves to consolidate this new permit with the permit that Rhodia UK Limited hold for the other activities under their operational control at the Oldbury Chemical Works installation.

The variation also serves to authorise a change in the process carried out at the transferred production building. The transferred plant will no longer be used to produce polyphosphoric acid but will instead produce sodium triethanolamine phosphate. The new process does not produce any emission to air. Cooling water (from the existing on-site cooling tower) will be used to control reaction temperature.

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

Status Log of permit EPR/SP3339BL (Permit A)		
Detail	**Date**	**Response Date**
Application SP3339BL	Received 26/01/2005	
Request for Further Information	Schedule 4 Notice dated 28/06/05	Responses dated 29/07/2005 and 16/09/05
Request to extend determination	Request to extend determination to 30/09//2005 dated 27/07/2005	Request accepted 28/07/2005
Request to extend determination	Request to extend determination to 30/11//2005 dated 29/09/2005	Request accepted 04/10/2005
Permit determined	21/12/2005	
Application for variation EP3535LR	Received 03/02/06	
Variation EP3535LR	Determined 10/03/06	
Application for variation UP3038MK	Received 05/10/06	
Variation UP3038MK	Determined 10/11/06	
Application for Variation ZP3332UE	Received 14/06/07	
Consolidated Variation ZP3332UE	Determined 23/07/07	
Consolidated Variation RP3831UE	Determined 07/11/07	
Application for Variation KP3330XQ	Received 13/11/07	
Variation KP3330XQ	Determined 29/05/08	

Status Log of permit B: EPR/VP3533HM (Permit B)		
Detail	**Date**	**Response Date**
Application EPR/VP3533HM/T001 (partial transfer of permit EPR/SP3039BY)	Duly made 01/10/10	
Partial transfer determined EPR/VP3533HM	16/11/10	

Other Part A installation permits relating to this installation		
Operator	**Permit Number**	**Date of Issue**
Thermphos UK Limited	SP3039BY	21/12/2005

End of Introductory note

Notice of variation and consolidation

Environmental Permitting
(England and Wales) Regulations 2010

Permit number
EPR/SP3339BL
Variation number
EPR/SP3339BL/V007

The Environment Agency in exercise of its powers under Regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 (SI 2000 No 675) (the Regulations) varies the environmental permits as set out below and in exercise of its powers under Regulation 18 of the Regulations replaces them with a consolidated environmental permit in the form set out in Schedule 2

Permit	Site address	Type of regulated facility	Original permit number
A	Oldbury Chemical Works, Trinity Street, Oldbury West Midlands	Organic chemical manufacture	SP3339BL
B	Oldbury Chemical Works, Trinity Street, Oldbury West Midlands	Organic chemical manufacture	EPR/VP3533HM

The conditions of environmental permits A and B held by:
Rhodia UK Limited ("the operator"),

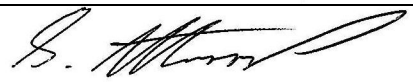
whose registered office

Oak House
Reeds Crescent
Watford
Hertfordshire
WD24 4QP

company registration number **36833**

are varied to the extent set out in Schedule 1 to this notice and replaced with a consolidated environmental permit in the form set out in Schedule 2.

This notice shall take effect from 30 November 2010

Name	Date
	30/11/10

Authorised on behalf of the Environment Agency

Schedule 1: Variations to Environmental Permits

Permit A: **SP3339BL**

All conditions were replaced with new template conditions.

Permit B: **EPR/VP3533HM**

The following conditions were varied on the application of the operator.

I. The following conditions of EPR permit VP3533HM are deleted

- Condition 2.2.1.2 including Table 2.2.1
- Condition 2.2.1.3. including Table 2.2.2

II. The following condition of EPR permit VP3535HM are amended as follows:

1.1.1 The Operator is authorised to carry out the activities and the associated activities specified in Table 1.1.1.

Table 1.1.1 Permitted activities

Activity listed in Schedule 1 of the EPR Regulations / Associated Activity	Description of specified activity	Limits of specified activity
Section 4.1 A(1) (v) – Producing organic chemicals such as organic compounds containing phosphorous.	(i) Manufacture of sodium triethanolamine phosphate (ii) Manufacture of potassium ethoxylated cresol phosphate	Receipt of raw materials to despatch of finished product.
Directly associated activity.	Storage and handling of solid and liquid materials in bulk storage tanks, drums, IBC's, bags and other containers.	Receipt and storage of raw materials to transfer to batch preparation or other process areas.
Directly associated activity.	Operation of site abatement systems for the control of releases to air.	Extraction and collection of waste gases and treatment with fabric filters and scrubbers
Directly associated activity.	Operation of site systems for the supply of utilities and services such as process heating (steam), cooling water, nitrogen, compressed air.	Site utility and services systems as far as the Installation boundary, including combustion units and gas burners of total thermal input 7MW.

2.1.1 The Permitted Installation shall, subject to the conditions of this Permit, be operated using the techniques and in the manner described in the documentation specified in Table 2.1.1, or as otherwise agreed in writing by the Agency in accordance with conditions 1.5.1 and 1.5.2 of this Permit.

Table 2.1.1: Operating techniques

Description	Parts	Date received
Information submitted in support of Application for Variation XP3037TV (EA/EPR/SP3339BL/V007)	BP10 process description	29 July 2010

Parameters for which reports shall be made, in accordance with conditions 4.1.2 and 4.1.3 of this Permit, are amended to:

Table S2: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins
Water usage	Sodium Triethanolamine Phosphate production plant	Annual	01/01/10
Energy usage	Sodium Triethanolamine Phosphate production plant	Annual	01/01/10
Waste disposal and/or recovery.	Sodium Triethanolamine Phosphate production plant	Annual	01/01/10

III. The following conditions are added to EPR permit VP3535HM

All conditions (including those varied as above) were replaced with new template conditions.

Schedule 2 – varied and consolidated permit

Please see attached.

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Rhodia UK Limited

Oldbury Chemical Works
Trinity Street
Oldbury
West Midlands
B69 4LN

Permit number

EPR/SP3339BL

Variation number

EPR/SP3339BL/V007

Oldbury Chemical Works
Permit Number EPR/SP3339BL

Introductory note

This introductory note does not form a part of the permit

The following Permit is issued under Regulation 13 of The Environmental Permitting (England and Wales) Regulations 2010 ("the EPR Regulations") to operate part of an installation carrying out activities covered by the descriptions in Sections 4.1 A(1)(a)(v), 4.2 A(1)(a)(i), 4.2 A(1)(a)(ii), 4.2 A(1)(a)(iv), 4.2 A(1)(a)(vi) and 5.3 A(1)(c)(ii) in Part 1 to Schedule 1 of the PPC Regulations, to the extent authorised by the Permit:

Section 4.1 A(1)(a)(v) - "Producing organic chemicals such as - organic compounds containing phosphorus."

Section 4.2 A(1)(a)(i) – "Producing inorganic chemicals such as gases (for example ammonia, hydrogen chloride, hydrogen fluoride, hydrogen cyanide, hydrogen sulphide, oxides of carbon, sulphur compounds, oxides of nitrogen, hydrogen, oxides of sulphur, phosgene)";

Section 4.2 A(1)(a)(ii) – "Producing inorganic chemicals such as acids (for example chromic acid, hydrofluoric acid, hydrochloric acid, hydrobromic acid, hydroiodic acid, phosphoric acid, nitric acid, sulphuric acid, oleum and chlorosulphonic acid)";

Section 4.2 A(1)(a)(iv) – "Producing inorganic chemicals such as salts (for example ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate, cupric acetate, ammonium phosphomolybdate)";

Section 4.2 A(1)(a)(vi) – "Producing inorganic chemicals such as halogens or interhalogen compound comprising two or more of halogens, or any compound comprising one or more of those halogens and oxygen";

Section 5.3 A(1)(c)(ii) – "Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by: - physico-chemical treatment, not being treatment specified in any paragraph other than paragraph D9 in Annex IIA to Council Directive 75/442/EEC, which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 in that Annex (for example, evaporation, drying, calcination, etc.) (D9)".

In some sections of the Permit conditions require the Operator to use Best Available Techniques (BAT), in each of the aspects of the management of the Permitted Installation, to prevent and where that is not practicable to reduce emissions. The conditions do not explain what is BAT. In determining BAT, the Operator should pay particular attention to relevant sections of the IPPC Sector guidance, appropriate Horizontal guidance and other relevant guidance.

A non-technical description of the Permitted Installation is given in the Application, but the main features of the Permitted Installation are as follows.

Rhodia UK Limited operates part of an Installation which includes a further facility for inorganic chemical manufacture operated by Thermphos UK Limited. The Installation is situated adjacent to an elevated section of the M5 motorway to the east of Oldbury in the West Midlands. Appropriate communication systems and common procedures are in place between the Operators to secure emergency response, management of effluent treatment, supply of utilities, etc., in order to control and minimise the impact of the Installation on the environment. The Installation is a Top Tier facility under the Control of Major Accident Hazards (COMAH) Regulations [SI No. 743, 1999].

Rhodia operates a number of manufacturing units for the production of phosphorus-based chemicals, mainly phosphorus chlorides and their downstream products plus a range of phosphine derivatives. Total output from this part of the Installation is in excess of 100,000 tonnes per annum. Principal process operations and product streams are as follows.

ADPA

Aceto diphosphonic acid (ADPA) is a water treatment chemical produced in a batch process involving multiple steps, which include hydrolysis of phosphorus trichloride, reaction with acetic anhydride and further hydrolysis followed by distillation to refine the product.

Chlorine Plant

Chlorine is used for the manufacture of phosphorus trichloride and is delivered to site in bulk road tankers, which are scheduled so as to minimise the site inventory for safety reasons. Offloading and subsequent use in the process is subject to sophisticated computer control.

Phosphorus Trichloride

Phosphorus trichloride is produced on a continuous unit by direct reaction of phosphorus with chlorine. The reaction is virtually instantaneous and exothermic and the heat of reaction is removed by operating at reflux via a water-cooled condenser.

Phosphorus Oxychloride

Manufacture of phosphorus oxychloride is undertaken on a continuous loop reactor by direct oxidation of phosphorus trichloride with gaseous oxygen. The reaction is exothermic and the heat of reaction is removed via a water-cooled heat exchanger.

Phosphorus Storage

Operations on this part of the Oldbury Installation consume considerable quantities of elemental phosphorus, which is delivered to site in solid form by road tanker. Since phosphorus spontaneously combusts on contact with air, it is delivered, stored and handled under a blanket of water (or sometimes nitrogen). The solid phosphorus is melted by application of steam to heating coils on the road tankers and transferred to bulk storage or direct to a consuming plant. Transfers of molten phosphorus are effected either by displacement with water or pumping and all handling systems are equipped with water heating facilities for this purpose. All transfer lines are heated by either electrical or steam tracing.

Phosphine/THPX

The phosphine/THPX complex consists of two very similar reaction trains. Phosphine is produced by the reaction of amorphous phosphorus with steam. The phosphine gas is then reacted with formaldehyde and either hydrochloric or sulphuric acid to form tetrakis-hydroxymethylphosphonium chloride (THPC) or tetrakis-hydroxymethylphosphonium sulphate (THPS). THPX is the generic abbreviation for these two products, which are used as textile flame retardants (after further processing) and water treatment biocides.

Proban

Proban is the proprietary name for a range of flame-retardants produced by Rhodia. They are manufactured on a batch process by reacting tetrakis-hydroxymethylphosphonium chloride (THPC) with urea in an aqueous solution.

Phosphorus Acid Handling

Phosphorus Acid (in solid flake form) is supplied as a raw material in 1 tonne bags. The phosphorus acid (PA) handling plant produces molten acid, acid solutions and acid blends for use elsewhere on site.

Briquest

Briquest is the trade name given to Rhodia's range of aminomethylene phosphonates which are used as sequesterants in a wide range of industries, including water treatment, detergent formulation and corrosion/scale inhibition. Manufacture is conducted on a batch production plant with a number of reactor trains. One of these reactor trains also produces Rhodia's Aquarite range of organophosphorus copolymers, which are highly specialised and specific products for water treatment applications. The Briquest reactions are conducted sequentially and comprise the acid catalysed reaction of phosphorus acid and formaldehyde with an amine. The amine used as a feedstock determines the final properties of the product and a wide range of these products is manufactured.

Semi Works

The Semi Works Plant represents an intermediate stage between pilot scale manufacture and full scale commercial production and is a multi-purpose plant capable of operating a number of reaction processes. It provides a facility where processes developed by Rhodia may be scaled up for operation during the development phase of a particular product market. Manufacture of such products may continue on the Semi Works Plant for some years whilst the market develops to full commercial potential. Operations are governed by a Multi Product Protocol (subject to conditions within this Permit) which defines the range of chemistries, raw materials and products which are permitted and provides a formal mechanism for the assessment of possible new products and processes and their potential for environmental impact. Reactor heating and cooling is provided by a thermal fluid circulatory system which is indirectly heated by a small gas-fired heater or cooled by water cooled heat exchanger and/or ammonia refrigeration unit.

Accomet

Accomet is the name given to a solution of mixed hexavalent and trivalent chromic acids complexed with silica to form an emulsion. It is manufactured batch wise and is used in the metal finishing industry.

CLB

The Customised Liquid Blending (CLB) Plant produces a wide variety of products used mainly in the metal finishing, water treatment and automotive industries. A wide range of processes is conducted on the plant, which are essentially mixing operations, which may involve simple chemical reactions, e.g., neutralisation.

Pilot Plant

The Pilot Plant provides the facility for larger scale operation of new or improved processes developed in the research laboratory. This may involve manufacture of tonnage quantities for sale to customers, sometimes over extended timescales. As with the Semi Works Plant, operation of the Pilot Plant is governed by a Multi Product Protocol which is subject to conditions within this Permit.

Infrastructure & Abatement

There is extensive abatement of potential releases to air, comprising condensers (mainly water cooled but including some chilled), a wide number of scrubbers employing a variety of media, bag filters and on the Phosphine plant, two small incineration units (approximately 0.24 MWTh aggregate input). Principle emissions to air include volatile organic compounds, hydrogen chloride, phosphorus pentoxide, chlorine and particulates but there are a number of other minor releases arising from the overall complexity of the facility and the wide range of products.

The site operates two similar steam boilers firing on gas with an aggregate thermal capacity (input) of just under 30 MWTh, although the normal operating mode consists of one duty boiler and one standby. Back-up fuel, in the event of interrupted gas supply, is diesel. Combustion gases are vented via a 61 metre stack. There are also four standby diesel generator sets, which together aggregate approximately 0.21 MWTh input.

Steam supply may be supplemented from the CHP Plant, which also supplies electricity to the Installation.

Rhodia operates a primary Effluent Treatment Plant, which handles aqueous effluent arising from all operations within the Oldbury Installation. The effluent from the site is generally acidic and is first neutralised with 25% sodium hydroxide before being discharged to sewer under a Trade Discharge Consent for further treatment at Severn Trent Water's Ray Hall or Minworth Sewage Treatment Works.

Surface water from the Installation is also processed via the effluent treatment plant under normal circumstances. However, under extreme storm conditions, excess storm water may overflow to the Chemical Arm of the Birmingham Canal.

Water is supplied to the Installation from the Towns' Water main and from boreholes located on the site.

The Installation's nitrogen supply is furnished by a cryogenic air separation plant owned and operated by the gas supply company but located within the Installation. Bulk liquid nitrogen may also be brought in by road tanker if required. This unit has minimal potential for environmental impact.

General and process wastes are categorised and recovered, recycled or disposed of according to characteristics.

There are no SSSI's within 2km of the installation. There is a European site, Fenn's Pools SAC, approximately 7km west of the installation.

This part of the Installation operates under a Climate Change Levy Agreement held by the parent company, Rhodia Holdings Limited.

This part of the Installation operates an Environmental Management System, which is not accredited to BS EN ISO14001 or registered under EMAS.

Note that the Permit requires the submission of certain information to the Agency (see Sections 4 and 5). In addition, the Agency has the power to seek further information at any time under regulation 28 to the PPC Regulations provided that it acts reasonably.

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

Status Log of permit EPR/SP3339BL (Permit A)		
Detail	**Date**	**Response Date**
Application SP3339BL	Received 26/01/2005	
Request for Further Information	Schedule 4 Notice dated 28/06/05	Responses dated 29/07/2005 and 16/09/05
Request to extend determination	Request to extend determination to 30/09//2005 dated 27/07/2005	Request accepted 28/07/2005
Request to extend determination	Request to extend determination to 30/11//2005 dated 29/09/2005	Request accepted 04/10/2005
Permit determined	21/12/2005	
Application for variation EP3535LR	Received 03/02/06	
Variation EP3535LR	Determined 10/03/06	
Application for variation UP3038MK	Received 05/10/06	
Variation UP3038MK	Determined 10/11/06	
Application for Variation ZP3332UE	Received 14/06/07	
Consolidated Variation ZP3332UE	Determined 23/07/07	
Consolidated Variation RP3831UE	Determined 07/11/07	
Application for Variation KP3330XQ	Received 13/11/07	
Variation KP3330XQ	Determined 29/05/08	
Application EPR/VP3533HM/T001 (partial transfer of permit EPR/SP3039BY)	Duly made 01/10/10	
Partial transfer determined EPR/VP3533HM	Issued 16/11/10	
Application for variation and permit consolidation XP3037TV (EPR/SP3339BL/V007)	Duly made 01/10/10	
Consolidated and varied permit	Issued 30/11/2010	

Other Part A installation permits relating to this installation		
Operator	**Permit Number**	**Date of Issue**
Thermphos UK Limited	SP3039BY	21/12/2005

End of Introductory Note

Permit

Permit number
EPR/SP3339BL

Variation number
EPR/SP3339BL/V007

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

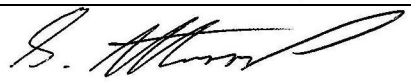
Rhodia UK Limited ("the operator"),

whose registered office is
Oak House
Reeds Crescent
Watford
Hertfordshire
WD24 4QP

company registration number **36833**

to operate part of an installation at
Oldbury Chemical Works
Trinity Street
Oldbury
West Midlands
B69 4LN

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

	Date
	**30 November 2010**

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:

(a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;

(b) review and record at least every four years whether changes to those measures should be made; and

(c) take any further appropriate measures identified by a review.

1.5 Multiple operator installations

1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

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, which is within the area edged in red on the site plan that represents the extent of the installation covered by this permit and that/those of (the) other operator(s) of the installation.

2.3 Operating techniques

2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in Schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

(b) 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 specified in schedule 1, table S1.2 or otherwise required under this permit, 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.

2.3.2 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.

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

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

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

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

3.2 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;

(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 Monitoring

3.3.1 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

3.3.2 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.

3.3.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.3.4 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 and S3.2 unless otherwise agreed in writing by the Environment Agency.

3.4 Odour

3.4.1 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.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Noise and vibration

3.5.1 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.

3.5.2 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;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

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

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

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

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the annual production /treatment data set out in schedule 4 table S4.2; and

(c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

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

(a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

(b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 The operator shall submit an annual solvent management plan in order to demonstrate compliance with the requirements of the Solvent Emissions Directive, as specified in Article 9(1) of the Directive, by 31 January each year in respect of the previous year.

4.3 Notifications

4.3.1 The Environment Agency shall be notified without delay following the detection of:

(a) 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) the breach of a limit specified in the permit; or

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 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:

(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.

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 “without delay”, in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
S4.1A(1)(a)(v)	Manufacture of:- • aceto diphosphonic acid (ADPA); • tetrakis-hydroxymethylphosphonium chloride (THPC) or tetrakis-hydroxymethylphosphonium sulphate (THPS); • Proban range of flame retardants; • aminomethylene phosphonates (Briquest range) and organophosphorus copolymers (Aquarite range), including operation of Phosphorus Acid Handling Plant; • Semi Works Plant operations involving development activities and intermediate scale manufacture of phosphorus-based chemicals, subject to the requirements of the Multi Product Protocol; • Pilot Plant (Aggregation Group 1) operations involving development activities and pilot scale manufacture of phosphorus-based chemicals, subject to the requirements of the Multi Product Protocol; ▪ Phosphorus-based chemicals on the Customised Liquid Blending (CLB) Plant. ▪ Manufacture of sodium triethanolamine phosphate ▪ Manufacture of potassium ethoxylated cresol phosphate	Receipt of raw materials to storage of finished product incorporating relevant activities below
S4.2A(1)(a)(vi)	Manufacture of:- • phosphorus trichloride, including Phosphorus Storage and operation of the Chlorine Plant; ▪ phosphorus oxychloride	Receipt of raw materials to storage of finished product incorporating relevant activities below
S4.2A(1)(a)(i)	Manufacture of phosphine	Receipt of raw materials to storage of finished product incorporating relevant activities below
S4.2A(1)(a)(ii)	Manufacture of mixed hexavalent and trivalent chromic acids-silica emulsions (Accomet range)	Receipt of raw materials to storage of finished product incorporating relevant activities below
S4.2A(1)(a)(iv)	Preparation of phosphate products on the Customised Liquid Blending (CLB) Plant	Receipt of raw materials to storage of finished product incorporating relevant activities below
S5.3 A(1)(c)(ii)	Operation of the Effluent Treatment Plant (ETP) for the control of releases to sewer	Collection, treatment and discharge to sewer of process effluent and surface water

Table S1.1 activities		
Directly Associated Activity		
Raw material storage	Storage of solid and liquid materials in bulk storage tanks, drums, IBC's, bags and other containers	Receipt and storage of raw materials to transfer process areas
Waste handling and storage	Storage and handling of waste materials arising from processing activities according to category, including preparation for disposal or recovery	From generation of waste materials to despatch for disposal or recovery
Abatement	Operation of site abatement systems for the control of releases to air.	Extraction and collection of waste gases and treatment with fabric filters and scrubbers
Provision of site utilities	Operation of site systems for the supply of utilities and services such as process heating (steam), cooling water, nitrogen, compressed air.	Site utility and services systems as far as the Installation boundary, including combustion units and gas burners of total thermal input 7MW.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The responses to questions 2.1 and 2.2 given in the Application documents referenced as follows: RhodiaUK/SP3339BL/B1.3.1(ii); RhodiaUK/SP3339BL/B2.1.1; RhodiaUK/SP3339BL/B2.2.1; RhodiaUK/SP3339BL/B2.2.3; RhodiaUK/SP3339BL/B2.2.24; RhodiaUK/SP3339BL/B2.2.54; RhodiaUK/SP3339BL/B2.2.58(i); RhodiaUK/SP3339BL/B2.2.58(ii).	26/01/2005
Response to Schedule 4 Notice dated 28/06/05	The full response	19/09/2005
Application for Variation RP3831UE	Letter dated 22 August 2007	06/09/2007
Information submitted in support of Application for Variation XP3037TV (EA/EPR/SP3339BL/V007)	BP10 process description	29 July 2010

Table S1.3 Improvement programme		
Reference	**Requirement**	**Date**
IC1	In conjunction with Thermphos UK Limited and Npower Cogen, the Operator shall complete a CCTV survey of the site drainage system with the purpose of assessing the integrity of the system, having regard for Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003. A written report summarising the findings shall be submitted to the Agency, which shall include proposals for improvements with a timescale for implementation which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed
IC2	In agreement with Thermphos UK Limited, the Operator shall develop and implement protocols and procedures which shall control the transfer of effluent from the Thermphos UK Limited part of the Installation to the Effluent Treatment Plant, having regard for Agency Sector Guidance Note IPPC S4.03, Draft 1 (Consultation) May 2004. These shall include, but not be limited to, requirements for the monitoring of the composition and flow rate of the effluent and emergency procedures to be implemented in the event of abnormal effluent composition, spillage and/or fire. A copy of the protocols and procedures shall be submitted to the Agency which shall be implemented unless otherwise agreed in writing by the Agency.	Completed
IC3	The Operator shall review the Environmental Management System, with particular regard for protocols and procedures which govern the joint operation of the Installation with the other Operators, having regard for the Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003. A written report summarising the findings shall be submitted to the Agency, which shall include proposals for improvements with a timescale for implementation which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed
IC4	The Operator shall review the provision of MCERTS accreditation for the monitoring methods, procedures, equipment, personnel and organisations employed for the emissions monitoring programmes required by conditions 2.10.1 and 2.10.2, having regard for Agency Sector Guidance Notes IPPC S4.02, Issue 6, April 2003 and IPPC S4.03, Draft 1 (Consultation) May 2004 and the hierarchy of Sampling and Analysis Standards presented. A copy of the review shall be submitted to the Agency and shall propose a timetable for achieving the MCERTS standard for any elements that are not MCERTS certified or accredited which shall be implemented unless otherwise agreed in writing by the Agency.	Completed
• IC5	The Operator shall carry out an assessment of the options available for reducing releases of Phosphorus, list one and list two substances to water (the Chemical Arm of the Birmingham Canal), having regard for Agency Sector Guidance Note IPPC S4.03, Draft 1 (Consultation) May 2004. A written report summarising the findings shall be submitted to the Agency, which shall include an assessment of the potential for environmental impact associated with techniques and options selected for consideration. The report shall include proposals for improvements with a timescale for implementation which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed

Table S1.3 Improvement programme		
Reference	**Requirement**	**Date**
IC6	The Operator shall carry out an assessment of the options available for preventing or reducing stormwater overflow to the Chemical Arm of the Birmingham Canal, having regard for Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003. A written report summarising the findings shall be submitted to the Agency which shall include an assessment of the potential for environmental impact associated with techniques and options selected for consideration. The report shall include proposals for improvements with a timescale for implementation which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed
IC7	The Operator shall conduct further assessment of the potential for environmental impact arising from the release of oxides of nitrogen and oxides of sulphur from release point A45, Boiler Stack. The assessment methodology and the input data to be employed shall be agreed with the Agency prior to completing the assessment and shall have regard for the Agency's Horizontal Guidance Note H1, Issue 6, July 2003. A written report evaluating the results, and including a copy of the assessment, shall be submitted to the Agency.	Completed
IC8	The Operator shall conduct a campaign of monitoring designed to characterise more fully the releases from release point A13, the Proban Plant Transvac Vent, having regard for Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003. The monitoring methods, procedures, frequency of monitoring and duration of the campaign are to be agreed in writing with the Agency prior to implementation. Monitoring data generated by the campaign shall be used to conduct further assessment of the potential for environmental impact arising from the releases from this release point. The assessment methodology to be employed shall be agreed with the Agency prior to completing the assessment and shall have regard for the Agency's Horizontal Guidance Note H1, Issue 6, July 2003. A written report evaluating the results, and including a copy of the assessment and the monitoring data, shall be submitted to the Agency.	Completed
IC9	On completion of IC8 and the conclusion of the monitoring programmes of other Operators at the Installation the Operator shall in conjunction with the other Operators at the Installation conduct a repeat in combination modelling exercise to assess the impact of the emissions to air from the Installation. A report of the outcome of this exercise and any recommendations shall be reported to the Agency along with a timetable for implementation of any recommendations.	Completed

Table S1.3 Improvement programme		
Reference	**Requirement**	**Date**
IC10	The Operator shall review the Monitoring Schedule for the part of the Installation under their control, having regard for the Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003, and shall make proposals for a revised Monitoring Schedule which is more appropriate to the potential impacts arising from the operation of this part of the Installation, taking into account the outputs against Improvement Conditions IC4, IC5, IC7, IC8 and IC12 and the results of the environmental monitoring conducted under condition 2.10.2. A written report describing the proposed Monitoring Schedule shall be submitted to the Agency which shall include a timescale for implementation which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed
IC11	The Operator shall review the written Site Closure Plan having regard for Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003 and shall submit a copy to the Agency.	Completed
IC12	The Operator shall carry out an assessment of the options available for reducing all releases of oxides of phosphorus and particulate matter, having regard for Agency Sector Guidance Note IPPC S4.03, Draft 1 (Consultation) May 2004. A written report summarising the findings shall be submitted to the Agency which shall include an assessment of the potential for environmental impact associated with techniques and options selected for consideration. The report shall include proposals for improvements with a timescale for implementation which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed
IC13	The Operator shall develop a written procedure to regularly review fugitive releases from the installation, demonstrating the application of an appropriate, effective and structured LDAR (leak detection and repair) system and the development of an action plan to implement any improvements identified, as described in sections 2.2.4 and 2.2.5 of Agency Sector Guidance Note IPPC S4.02, Issue 6, April 2003. The operator shall periodically update this review and action plan in accordance with Condition 4.1.4 of this Permit with the purpose of minimising fugitive releases. A report shall be submitted to the Agency which shall include a copy of the procedure and a description of the outcome of the first review, including details of any proposed improvements and the timetable for their implementation, which shall be adhered to unless otherwise agreed in writing by the Agency.	Completed
IC14	The operator shall carry out a detailed risk assessment that considers the potential impact should hydrochloric acid enter the surface water system following a major tanker failure, based on the wrong tanker unit being filled with hydrochloric acid. The only barrier to prevent this from occurring at present appears to be procedural. Based on the conclusions of the risk assessment you shall implement suitable mitigation measures that demonstrate BAT. The reliance on your effluent treatment plant for major spillages is not considered BAT, and your risk assessment should take this into consideration.	Completed

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
No specification set	

Schedule 3 – Emissions and monitoring

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

Emission point ref. & location	Source	Parameter	Limit (incl. unit) (note1)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (Point 1A on Site Plan in Schedule 7)	ADPA Plant Stack	Class B organic compounds (expressed as toluene)	2kg/hr	Spot sample	Annually	In-house method
		Hydrogen chloride	0.1kg.hr	Spot sample	Annually	In-house method
A2 (Point 1B on Site Plan in Schedule 7)	ADPA Plant Acetic Anhydride Tank	No monitoring required				
A3 (Point 2A on Site Plan in Schedule 7)	Chlorine Scrubber	Chlorine	10mg/m^3	Spot sample	Annually	In-house method
A4 (Point 3A on Site Plan in Schedule 7)	Phosphorus Trichloride and Phosphorus Oxychloride Scrubber	Chlorine	10mg/m^3	Spot sample	Annually	In-house method
		Phosphate (as P_2O_5)	50mg/m^3	Spot sample	Annually	In-house method
		Hydrogen chloride	10mg/m^3	Spot sample	Annually	In-house method
A5 (Point 5A on Site Plan in Schedule 7)	Phosphorus Storage Plant Demister	Phosphate (as P_2O_5)	50mg/m^3	Spot sample	Annually	In-house method
A6 (Point 6A on Site Plan in Schedule 7)	Phosphine 1 Plant Stack	Phosphine	30mg/m^3	Spot sample	Quarterly	In-house method
		Phosphate (as P_2O_5)	100mg/m^3	Spot sample	Annually	In-house method
		Formaldehyde	5mg/m^3	Spot sample	Annually	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Hydrogen Chloride	10mg/m^3	Spot sample	Annually	In-house method
A7 (Point 6B on Site Plan in Schedule 7)	Phosphine 2 Plant Stack	Phosphine	30mg/m^3	Spot sample	Quarterly	In-house method
		Phosphate (as P_2O_5)	100mg/m^3	Spot sample	Annually	In-house method
		Formaldehyde	5mg/m^3	Spot sample	Annually	In-house method
		Hydrogen Chloride	10 mg/m^3	Spot sample	Annually	In-house method
A8 (Point 6C on Site Plan in Schedule 7)	Phosphine Plant Formaldehyde Storage Tank Scrubber	Formaldehyde	100 mg/m^3	Spot sample	Annually	In-house method
A9 (Point 6D on Site Plan in Schedule 7)	THPX Reactor System Bursting Disc	No monitoring required				
A10 (Point 6E on Site Plan in Schedule 7)	THPX Concentrator Bursting Disc	No monitoring required				
A11 (Point 6F on Site Plan in Schedule 7)	THPX Reactor Acid Measure Tank	No monitoring required				
A12 (Point 6G on Site Plan in Schedule 7)	THPX Plant Product Treatment Tank	No monitoring required				
A13 (Point 7A on Site Plan in Schedule 7)	Proban Plant Transvac	No monitoring required				
A14 (Point 7B on Site Plan in Schedule 7)	Proban Plant LEV	No monitoring required				
A15 (Point 8A on Site Plan in Schedule 7)	Phosphorus Acid Handling Plant LEV	Phosphate (as P_2O_5)	10 mg/m^3	Spot sample	Annually	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A16 (Point 8B on Site Plan in Schedule 7)	Phosphorus Acid Handling Plant Hydrochloric Acid Tank Scrubber	Hydrogen chloride	0.01 kg/hr	Spot sample	Annually	In-house method
A17 (Point 9A on Site Plan in Schedule 7)	Briquest Reactors and Building LEV	Hydrogen chloride	10mg/m^3	Spot sample	Annually	In-house method
		Formaldehyde	5mg/m^3	Spot sample	Annually	In-house method
		Amines (as diethylamine)	10mg/m^3	Spot sample	Annually	In-house method
		Acrylic acid (as toluene)	2kg/hr	Spot sample	Annually	In-house method
A18 (Point 9B on Site Plan in Schedule 7)	Tetrax Reactors and Building LEV	Hydrogen chloride	10mg/m^3	Spot sample	Annually	In-house method
		Formaldehyde	5mg/m^3	Spot sample	Annually	In-house method
		Amines (as diethylamine)	10mg/m^3	Spot sample	Annually	In-house method
A19 (Point 9C on Site Plan in Schedule 7)	Briquest Plant Formaldehyde and Acid Storage Tanks Scrubber	Hydrogen chloride	20mg/m^3	Spot sample	Annually	In-house method
		Formaldehyde	100mg/m^3	Spot sample	Annually	In-house method
A20 (Point 9D on Site Plan in Schedule 7)	Briquest Plant Reactor Systems Bursting Disc Dump Tank	No monitoring required				

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A21 (Point 9E on Site Plan in Schedule 7)	Tetrax Reactor System Bursting Disc Dump Tank	No monitoring required				
A22 (Point 9F on Site Plan in Schedule 7)	Briquest Plant Drum Filling Area LEV	No monitoring required				
A23 (Point 9G on Site Plan in Schedule 7)	Briquest Plant Acrylic Polymers Reactor Charging LEV	Acrylic acid (as toluene)	2kg/hr	Spot sample	Annually	In-house method
A27 (Point 11A on Site Plan in Schedule 7)	Semi Works Plant Building Vent	Hydrogen chloride	10mg/m^3	Spot sample	Note 2	In-house method
		Phosphate (as P_2O_5)	100mg/m^3	Spot sample	Note 2	In-house method
		Total Class A Organic compounds (speciated)	100g/hr	Spot sample	Note 2	In-house method
		Total Class B Orgaic compounds (as toluene)	2kg/hr	Spot sample	Note 2	In-house method
		Formaldehyde	5mg/m^3	Spot sample	Note 2	In-house method
		1,2-dichloroethane	5mg/m^3	Spot sample	Note 2	In-house method
		Amines (as diethylamine)	10mg/m^3	Spot sample	Note 2	In-house method
		Chlorine	10mg/m^3	Spot sample	Note 2	In-house method
		Ethyl chloride	2kg/hr	Spot sample	Note 2	In-house method
		Phosphine	5mg/m^3	Spot sample	Note 2	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A29 (Point 11C on Site Plan in Schedule 7)	Semi Works Thermal Oil Heater Stack	No monitoring required				
A31 (Point 12A on Site Plan in Schedule 7)	Accomet Plant Dust Control Unit	No monitoring required				
A32 (Point 12B on Site Plan in Schedule 7)	Accomet Plant Reactor Breather Vent	No monitoring required				
A33 (Point 13A on Site Plan in Schedule 7)	Customised Liquid Blending Plant General Purpose Scrubber	Formaldehyde	5 mg/m^3	Spot sample	Annually	In-house method
		Total Class A and B Volatile Organic Compounds (expressed as toluene)	100g/hr	Spot sample	Annually	In-house method
		Total Acid Forming Oxides of Nitrogen (expressed as NO_2)	200 mg/m^3	Spot sample	6-monthly	In-house method
A34 (Point 13B on Site Plan in Schedule 7)	Customised Liquid Blending Plant Ejector Scrubber	Formaldehyde	5 mg/m^3	Spot sample	Annually	In-house method
		Total Class A and B Volatile Organic Compounds (expressed as toluene)	100g/hr	Spot sample	Annually	In-house method
		Total Acid Forming Oxides of Nitrogen (expressed as NO_2)	200 mg/m^3	Spot sample	6-monthly	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A35 (Point 13C on Site Plan in Schedule 7)	Customised Liquid Blending Plant Nitric Acid Storage Tank Scrubber	Total Acid Forming Oxides of Nitrogen (expressed as NO_2)	300 mg/m^3	Spot sample	Quarterly	In-house method
A36 (Point 13D on Site Plan in Schedule 7)	Customised Liquid Blending Plant Superlumes Reactors Vent	Formaldehyde	5 mg/m^3	Spot sample	Annually	In-house method
		Total Class A and B Volatile Organic Compounds (expressed as toluene)	100g/hr	Spot sample	Annually	In-house method
		Hydrogen sulphide	5 mg/m^3	Spot sample	6-monthly	In-house method
A37 (Point 14A on Site Plan in Schedule 7)	Pilot Plant No. 4 Building Fume Extraction Stack	Hydrogen chloride	5 mg/m^3	Spot sample	Note 2	In-house method
		Total Class A Organic compounds (speciated)	20 mg/m^3	Spot sample	Note 2	In-house method
		Total Class B Organic compounds (as toluene)	80 mg/m^3	Spot sample	Note 2	In-house method
		Chlorine	10 mg/m^3	Spot sample	Note 2	In-house method
		Phosphate (as P_2O_5)	50 mg/m^3	Spot sample	Note 2	In-house method
		Phosphine	5 mg/m^3	Spot sample	Note 2	In-house method
		1,2 - dichloroethane	5 mg/m^3	Spot sample	Note 2	In-house method
		Particulate matter	20 mg/m^3	Spot sample	Note 2	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Phosphorous trichloride	5 mg/m^3	Spot sample	Note 2	In-house method
		Hydrogen sulphide	5 mg/m^3	Spot sample	Note 2	In-house method
		Total oxides of sulphur (expressed as SO2)	200 mg/m^3	Spot sample	Note 2	In-house method
		Amines (as diethylamine)	10 mg/m^3	Spot sample	Note 2	In-house method
		Phenols, cresols, xylols	10 mg/m^3	Spot sample	Note 2	In-house method
		Formaldehyde	5 mg/m^3	Spot sample	Note 2	In-house method
		Ammonia	15 mg/m^3	Spot sample	Note 2	In-house method
A38 (Point 14B on Site Plan in Schedule 7)	Pilot Plant No. 4 Building Dump Tank Vent	No monitoring required				
A39 (Point 14C on Site Plan in Schedule 7)	Pilot Plant Filter Dryer Scrubber	Hydrogen chloride	5 mg/m^3	Spot sample	Note 2	In-house method
		Total Class A Organic compounds (speciated)	100 g/hr	Spot sample	Note 2	In-house method
		Total Class B Organic compounds (as toluene)	2 kg/hr	Spot sample	Note 2	In-house method
		Chlorine	10 mg/m^3	Spot sample	Note 2	In-house method
		Phosphate (as P_2O_5)	50 mg/m^3	Spot sample	Note 2	In-house method
		Phosphine	5 mg/m^3	Spot sample	Note 2	In-house method
		1,2 - dichloroethane	5 mg/m^3	Spot sample	Note 2	In-house method
		Particulate matter	20 mg/m^3	Spot sample	Note 2	In-house method
		Phosphorous trichloride	5 mg/m^3	Spot sample	Note 2	In-house method
		Hydrogen sulphide	5 mg/m^3	Spot sample	Note 2	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Total oxides of sulphur (expressed as SO2)	200 mg/m^3	Spot sample	Note 2	In-house method
		Amines (as diethylamine)	10 mg/m^3	Spot sample	Note 2	In-house method
		Phenols, cresols, xylols	10 mg/m^3	Spot sample	Note 2	In-house method
		Formaldehyde	5 mg/m^3	Spot sample	Note 2	In-house method
		Ammonia	15 mg/m^3	Spot sample	Note 2	In-house method
A40 (Point 14D on Site Plan in Schedule 7)	Pilot Plant Polyurethanes Preparation Laboratory Scrubber	Hydrogen chloride	5 mg/m^3	Spot sample	Note 2	In-house method
		Total Class A Organic compounds (speciated)	100 g/hr	Spot sample	Note 2	In-house method
		Total Class B Organic compounds (as toluene)	2 kg/hr	Spot sample	Note 2	In-house method
		Chlorine	10 mg/m^3	Spot sample	Note 2	In-house method
		Phosphate (as P_2O_5)	50 mg/m^3	Spot sample	Note 2	In-house method
		Phosphine	5 mg/m^3	Spot sample	Note 2	In-house method
		1,2 - dichloroethane	5 mg/m^3	Spot sample	Note 2	In-house method
		Particulate matter	20 mg/m^3	Spot sample	Note 2	In-house method
		Phosphorous trichloride	5 mg/m^3	Spot sample	Note 2	In-house method
		Hydrogen sulphide	5 mg/m^3	Spot sample	Note 2	In-house method

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit) (note1)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Total oxides of sulphur (expressed as SO2)	200 mg/m^3	Spot sample	Note 2	In-house method
		Amines (as diethylamine)	10 mg/m^3	Spot sample	Note 2	In-house method
		Phenols, cresols, xylols	10 mg/m^3	Spot sample	Note 2	In-house method
		Formaldehyde	5 mg/m^3	Spot sample	Note 2	In-house method
		Ammonia	15 mg/m^3	Spot sample	Note 2	In-house method
A41 (Point 14E on Site Plan in Schedule 7)	Pilot Plant Filter Dryer, Vessel FD1800 and Nitrogen Main Pressure Relief Vent	No monitoring required				
A42 (Point 14F on Site Plan in Schedule 7)	Pilot Plant Filter Dryer Charging Booth and Discharge Point LEV	No monitoring required				
A43 (Point 14G on Site Plan in Schedule 7)	Pilot Plant Filter Dryer Charging Booth Low Level LEV	No monitoring required				
A44 (Point 14H on Site Plan in Schedule 7)	Pilot Plant Clean Room Low Level LEV	No monitoring required				
A45 (Point 15A on Site Plan in Schedule 7)	Boiler Stack	No monitoring required				

Note 1: See Section 6 for reference conditions

Note 2: The Operator shall monitor for this substance for every **first** batch of each production campaign.

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
W1 [point 18B on site plan in Schedule 5]	Site drainage under storm overflow conditions	pH	6 - 9	Spot sample	During storm overflow conditions only	BS 6068-2.50:1995
		Suspended solids	500mg/l	Spot sample		BS EN 872:1995
		Cadmium	10 µg/l	Spot sample		BS EN ISO 5961:1995
		Arsenic	No limit set	Spot sample		BS EN ISO 11969:1996
		Nickel	No limit set	Spot sample		BS6068-2.29:1987
		Lead	No limit set	Spot sample		BS6068-2.29:1987
		Phosphorous	No limit set	Spot sample		BS6068-2.83:2003
		Total Chromium	No limit set	Spot sample		BS EN 1233:1997
		Zinc	No limit set	Spot sample		BS6068-2.29:1987
		Copper	No limit set	Spot sample		BS6068-2.29:1987

Table S3.3 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 [point 18A on site plan in Schedule 5]	Installation Effluent Treatment Plant			No monitoring required		

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 3.3.1.	A4, A6, A7, A17, A27, A33, A34, A35, A36, A37, A39, A40.	Quarterly	01/01/2006
Emissions to air Parameters as required by condition 3.3.1.	A1, A15, A16, A18, A19.	6-monthly	01/01/2006
Emissions to air Parameters as required by condition 3.3.1.	A3, A5, A8, A31.	Annually	01/01/2006
Emissions to water Parameters as required by condition 3.3.1	W1	Each storm overflow condition	01/01/2006

Table S4.2: Annual production/treatment

Parameter	Units
Total finished product produced	tonnes

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Mains water (potable)	Annually	m^3
Mains water (potable) / tonne produced	Annually	m^3 / tonne
Non-potable water	Annually	m^3
Non-potable water / tonne produced	Annually	m^3 / tonne
Total electricity	Annually	MWh
Gas	Annually	MWh
Diesel	Annually	MWh
Imported electricity	Annually	MWh
Imported steam	Annually	MWh
Phosphate release to air / tonne product	Annually	tonnes
Hazardous waste produced	Annually	tonnes
Non-hazardous waste produced	Annually	tonnes

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Form A1 or other form as agreed in writing by the Environment Agency	08/11/2005
Water	Form W1 or other form as agreed in writing by the Environment Agency	08/11/2005
Waste produced	Form R1 or other form as agreed in writing by the Environment Agency	08/11/2005
Water usage	Form WU1 or other form as agreed in writing by the Environment Agency	08/11/2005
Energy usage	Form E1 or other form as agreed in writing by the Environment Agency	08/11/2005
Other performance indicators	Form PI1 or other form as agreed in writing by the Environment Agency	08/11/2005

Schedule 5 - Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

(a) Notification requirements for any 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	
Measures taken, or intended to be taken, to stop the emission	

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

(c) 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

"accident" means an accident that may result in pollution.

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

"authorised officer" means any person authorised by 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.

"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.

"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 limit..

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

"MCERTS" means the Environment Agency's Monitoring Certification Scheme.

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

"Solvent Emissions Directive" means Directive 1999/13/EC (as amended by Directive 2004/42/EC) on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.

"year" means calendar year ending 31 December.

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

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

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

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