

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Contract Chemicals (Knowsley) Limited

Knowsley, Contract Chemicals
Penrhyn Road
Knowsley Business Park
Prescot
Merseyside
L34 9HY

Variation application number

EPR/BL8619IA/V003

Permit number

EPR/ BL8619IA

Knowsley, Contract Chemicals

Permit number EPR/BL8619IA

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.

There are legacy waste and environmental risks associated with the site which the Operator and the Environment Agency have been working together to improve. Due to the advancement in the Environmental Permitting Regulations since the original permit issue in 2003, the current permit requires updating to modern conditions in order to facilitate this progress at the installation.

The Environment Agency led variation and consolidation comprises updating the whole of the original permit to a modern standard including incorporating the changes implemented by the Environmental Permitting (England and Wales) (Amendment) Regulations 2013 which transpose the requirements of the Industrial Emissions Directive (IED). This Environment Agency led variation and consolidation authorises the following changes:

- Condition 3.1.4 – refers to IED requirements for periodic monitoring for groundwater and for soil.
- Condition 4.3.1 - refers to IED requirements in the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment and/or breaches any permit condition.
- Schedule 6, Interpretation – IED reference added in.

The schedules specify the changes made to the original 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 received EPR/BL8619IA/A001 | Duly made 26/08/2003 | |
| Permit determined EPR/BL8619IA | 13/08/2004 | Original permit issued to Contract Chemicals (Knowsley) Limited. |
| Agency Variation issued EPR/BL8619IA/V002 | 04/11/2013 | Correction of Company Number. |
| Agency Variation issued EPR/BL8619IA/V003 | 06/10/2014 | Environment Agency application to consolidate and update the permit to modern conditions. |

Superseded Licences/Authorisations/Consents relating to this Installation

| Holder | Ref. Number | Date of Issue |
|---------------------------------------|--------------------|----------------------|
| Contract Chemicals (Knowsley) Limited | AF 7096 | 17/10/1992 |
| Contract Chemicals (Knowsley) Limited | AF 9650 | 02/11/1992 |
| Contract Chemicals (Knowsley) Limited | AK 3129 | 23/12/1993 |
| Contract Chemicals (Knowsley) Limited | AL 9220 | 14/06/1994 |
| Contract Chemicals (Knowsley) Limited | AZ 7505 | 01/01/1996 |
| Contract Chemicals (Knowsley) Limited | BA 9827 | 05/08/1998 |
| Contract Chemicals (Knowsley) Limited | BC 2149 | 19/02/1999 |

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 regulations 18 and 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

permit number

EPR/BL8619IA

issued to

Contract Chemicals (Knowsley) Limited (“the operator”)

whose registered office is

**Penrhyn Road
Knowsley Business Park
Prescot
Merseyside
L34 9HY**

company registration number 01737260

to operate a regulated facility at

**Penrhyn Road
Knowsley Business Park
Prescot
Merseyside
L34 9HY**

to the extent set out in the schedules.

The notice shall take effect from 06/10/2014

| Name | Date |
|-------------------|------------------------|
| A.J. Nixon | 06 October 2014 |

Authorised on behalf of the Environment Agency

Schedule 1

All conditions and schedules have been varied by the consolidated permit as a result of an Environment Agency initiated variation. Amendments to permit ERP/BL8619IA are as follows:

- Condition 3.1.4 – refers to IED requirements for periodic monitoring for groundwater and for soil.
- Condition 4.3.1 - refers to IED requirements in the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment and/or breaches any permit condition.
- Schedule 6, Interpretation – IED reference added in.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document EPR/BL8619IA.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/BL8619IA

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BL8619IA/V003 authorising,

Contract Chemicals (Knowsley) Limited (“the operator”),
whose registered office is

Penrhyn Road
Knowsley Business Park
Prescot
Merseyside
L34 9HY

company registration number 01737260

to operate an installation at

Penrhyn Road
Knowsley Business Park
Prescot
Merseyside
L34 9HY

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

| Name | Date |
|-------------------|------------------------|
| A.J. Nixon | 06 October 2014 |

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 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.

2.3.4 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 and S3.2.

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

3.1.3 For the following activities referenced in schedule 1, table S1.1 where a substance is specified in schedule 3 table S3.1 or S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.

3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
- (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

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

- (a) point source emissions specified in tables S3.1 and S3.2;

- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.3.1 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 and S3.2 unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
 - (b) be made as soon as reasonably practicable;
 - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
 - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
 - (b) the 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.

4.3 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 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.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

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.

4.4 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 |
|---|---|---|
| Section 4.1 A(1)(a)(ii) – producing organic chemicals such as organic compounds containing oxygen. | The production of a range of organic compounds. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Section 4.1 A(1)(a)(iii) - producing organic chemicals such as organic compounds containing sulphur. | The production of a range of organic compounds. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Section 4.1 A(1)(a)(iv) - producing organic chemicals such as organic compounds containing nitrogen. | The production of a range of organic compounds. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Section 4.1 A(1)(a)(vi) - producing organic chemicals such as organic compounds containing halogens. | The production of a range of organic compounds. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Section 4.2 A(1)(a)(ii) – producing inorganic chemicals such as acids. | The production of a range of acids. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Section 4.2 A(1)(a)(iv) – producing inorganic chemicals such as salts. | The production of a range of salts. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Section 4.2 A(1)(b) – unless falling within any other Section, any manufacturing activity which is likely to result in the release into the air of any hydrogen halide (other than the manufacture of glass or the coating, plating or surface treatment of metal) or which is likely to result in the release into the air or water of any halogen or any of the compounds mentioned in paragraph (a)(vi) (other than the treatment of water). | Using and/or releasing a range of hydrogen halides and/or halogens. | From receipt of raw materials and fuels onto the site to dispatch of the finished product and removal of associated wastes from the site. |
| Directly Associated Activity | | |
| Boiler House. | Burning oil or natural gas to generate steam for the use in the manufacturing process and in space heating. | From receipt of raw materials and fuels, to the release of combustion products to air and associated wastes removed from site. |

Table S1.1 activities

| Activity listed in Schedule 1 of the EP Regulations | Description of specified activity | Limits of specified activity |
|--|--|--|
| Cooling water used in condensers and coolers. | Supplied via recirculating systems to the Bonner Building, TDC Building, Diol Plant and Surfactant Hall Cooled in cooling towers around the site | From receipt of raw materials to completion of finished product and removal of associated wastes from site. |
| Bulk Gas Storage. | Storage and use of various gases for inerting and in various equipment and laboratory work. | From receipt of raw materials to completion of finished product and removal of associated wastes from site. |
| Heating Units and Circulating Systems. | Gas and/or oil fired heating units. Hot oil circulating systems supplying processes within the TDC Building and Surfactant Hall. | From receipt and storage of fuels, to release of combustion products to air and associated wastes removed from site. |

Table S1.2 Operating techniques

| Description | Parts | Date Received |
|----------------------------------|--|----------------------|
| Application EPR/BL8619IA/A001 | The responses to Questions 2.1 and 2.2 given in pages 5 to 18 of the Application Supporting Documents. | 26/08/2003 |
| Additional information | Inventory listing of substances. | 20/05/2004 |
| Additional information | VOC storage tank abatement. | 17/06/2004 |
| Additional information | VOC calculations. | 26/05/2004 |
| Additional information | Copy of the Installation multi-product protocol procedure and a Site Plan. | 20/07/2004 |

Table S1.3 Improvement programme requirements

| Reference | Requirement | Date |
|-----------|---|-------------------------|
| IC1 | The Operator shall introduce a procedure to regularly review the use of stirred tank reactors (STR) for all batch reactions and produce a report comparing the efficiency and waste generation with alternative reactor types. The procedure should require the demonstration of BAT for the use of STR for major plant alterations, significant process changes and the introduction of new processes. An action plan shall be developed to implement improvements identified. A copy of the written procedure shall be made available to the Environment Agency on request. | 28/02/2005 Completed |
| IC2 | The Operator shall review the provision of MCERTS accreditation for the monitoring equipment, personnel and organisations employed for the emissions monitoring programme in Tables S3.1 and S3.2 and propose a timetable for achieving this standard for any elements that are not MCERTS certified or propose an equivalent acceptable scheme to the Environment Agency. | 01/11/2005 Completed |
| IC3 | The Operator shall provide, in writing, a protocol used by the Operator to determine 'uncertainty' values associated with each parameter to be reported for each emission point together with an indication of the likely uncertainty values associated with the test methods to be used. | 01/02/2005 Completed |
| IC4 | The Operator shall provide a release profile for 2-ethoxyethanol, acrylonitrile, dimethylformamide, epichlorohydrin (1-chloro-2,3-epoxypropane) and specify the methods used to produce this profile. A written report shall be submitted to the Environment Agency detailing all release points, an environmental impact assessment and the total released into the environment in the previous calendar year. | 01/02/2006 Completed |
| IC5 | The Operator shall through means of monitoring, analysis and calculation determine concentration and mass release rate of combustion gases and particulates from emission point A11 (the boiler stack) for both heavy fuel oil and natural gas. Pollutants of concern to be covered are NO _x , SO _x and PM ₁₀ . Using this information the Operator shall carry out an impact assessment using H1 of emissions to air. A written report detailing emission data and the conclusions of the impact assessment including proposed emission limit values and future monitoring methods and frequency shall be submitted to the Environment Agency. | 01/09/2005 Completed |
| IC6 | The Operator shall establish by means of sampling and analysis the actual concentrations of mercury, cadmium, ammonia, zinc, fenitrothion, chloroform, toluene, lead, chloro-2,4-dinitrobenzene, chlorobenzene and dichloro-aniline in the discharge to sewer. The number of samples to be taken and analysed, a representative timeframe (to ensure a complete range of operating conditions are covered) and analysis methods to be agreed in writing with the Environment Agency. A written report summarising the analysis results including a comparison with background concentrations in the receiving water, impact assessment and proposed Emission Limit Values shall be submitted to the Environment Agency. | 01/02/2006 Completed |
| IC7 | The Operator shall carry out a design review of the LEV system in the Bonner Building to reduce the potential for fugitive releases during drum handling. | 28/02/2005 Completed |
| IC8 | The Operator shall provide improved chilled storage facilities in order to reduce the potential for VOC losses from all bulk VOC drum storage. | 28/02/2005 Completed |
| IC9 | The Operator shall upgrade the north side dump tank. | 01/12/2004 Completed |
| IC10 | The Operator shall provide a written report to the Environment Agency that reviews the provision of balance lines for all tanker off-loading. | 01/03/2005 Completed |

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels

| Raw materials and fuel description | Specification |
|------------------------------------|---------------|
| --- | --- |

Schedule 3 – Emissions and monitoring

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

| Emission point ref. & location # | Parameter | Source # | Limit (inclu. unit) | Reference period | Monitoring frequency | Monitoring standard or method |
|------------------------------------|------------------------------------|--------------------|--|------------------|--|--|
| A1, A2, A3, A4, A5, A6, A7, A8, A9 | VOC (Low) | Refer to key below | 2kg/hr (expressed as carbon) | --- | A1, A2, A3 – Continuous A4, A5, A6, A7, A8 – Once per shift | A1, A2, A3 – Innova A4, A5, A6, A7, A8 – Colourmetric |
| A1, A2, A3, A4, A5, A6, A7 | VOC (Medium) | Refer to key below | 100g/hr (expressed as Dichloromethane) | --- | A1, A2, A3, A7 – Continuous A4, A5, A6 – Once per shift | A1, A2, A3, A7 – Innova A4, A5, A6 – Colourmetric |
| A1, A2, A7 | VOC (High) | Refer to key below | 5mg/m ³ (expressed as benzene) | --- | A1, A2 – Twice per shift A7 – Continuous | A1, A2 – Colourmetric A7 - Innova |
| A2 | Bromine | Refer to key below | 10mg/m ³ | --- | Continuous | Electrochemical |
| A1, A2, A7 | Hydrogen Chloride | Refer to key below | 10mg/m ³ | --- | A1 – Continuous A2, A7 – Once per shift | A1 - Innova A2, A7 - Colourmetric |
| A1, A2, A7 | Hydrogen Bromide | Refer to key below | 5mg/m ³ | --- | Once per shift | Colourmetric |
| A1, A2 | Sulphur dioxide (SO ₂) | Refer to key below | 50mg/m ³ | --- | Once per shift | Colourmetric |
| A1, A2 | Oxides of nitrogen | Refer to key below | 50mg/m ³ (expressed as NO ₂) | --- | Once per shift | Colourmetric |
| A1, A2, A5 | Ammonia | Refer to key below | 10mg/m ³ | --- | A1, A5 – Once per shift A2 – Continuous | A1, A5 – Colourmetric A2 – Innova |
| A1, A2 | Organic Sulphides and Mercaptans | Refer to key below | 2mg/m ³ (expressed as H ₂ S) | --- | Once per shift | Colourmetric |
| A10 | Particulates | Refer to key below | 20mg/m ³ (expressed as PM ₁₀) | --- | Batch Basis | Gravimetric |

- KEY

A1 – TDC Enviro Scrubber. A2 – Bonner Enviro North Scrubber. A3 – Diacetate Plant Scrubber. A4 – SAH MOP Scrubber. A5 – SAH Scrubber. A6 – 800 Plant Scrubber. A7 – Diol Plant Scrubber. A8 – Buss Dryer Scrubber. A9 – Incoloy Dryer Scrubber. A10 – Fluid Bed Dryers. A11 - Boiler Stack.

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements

| Emission point ref. & location | Parameter | Source | Limit (incl. Unit) | Reference period | Monitoring frequency | Monitoring standard or method |
|---|-----------------------------------|---|---------------------------|-------------------------|-----------------------------|---|
| S1 emission point to United Utilities plc Fazakerley Sewage Treatment Works | Cadmium | All process effluents and surface water from plant area | --- | --- | Monthly | BS EN ISO 11885:1998, BS 6068-2.60:1998 |
| | Mercury | All process effluents and surface water from plant area | --- | --- | Monthly | SCA blue book 92. ISBN 0117519073 |
| | Volatile halogenated hydrocarbons | All process effluents and surface water from plant area | --- | --- | Monthly | SCA blue book 170 |
| | Ammonia | All process effluents and surface water from plant area | --- | --- | Monthly | BS EN ISO 11732:1997 |
| | Zinc | All process effluents and surface water from plant area | --- | --- | Monthly | BS EN ISO 11885:1998, BS 6068-2.60:1998 |
| | Lead | All process effluents and surface water from plant area | --- | --- | Monthly | BS EN ISO 11885:1998, BS 6068-2.60:1998 |

Schedule 4 - Reporting

Parameters, as required by condition 3.5.1, 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 |
|--|--|------------------|---------------|
| VOC (Low) as carbon | A1, A2, A3, A4, A5, A6, A7, A8, A9 | Quarterly | 01 January |
| VOC (Medium) as dichloromethane | A1, A2, A3, A4, A5, A6, A7 | Quarterly | 01 January |
| VOC (High) as benzene | A1, A2, A7 | Quarterly | 01 January |
| Bromine | A2 | Quarterly | 01 January |
| Hydrogen Chloride | A1, A2, A7 | Quarterly | 01 January |
| Hydrogen Bromide | A1, A2, A7 | Quarterly | 01 January |
| Sulphur dioxide (SO ₂) | A1, A2 | Quarterly | 01 January |
| Oxide of nitrogen as NO ₂ | A1, A2 | Quarterly | 01 January |
| Ammonia | A1, A2, A5 | Quarterly | 01 January |
| Organic Sulphides and Mercaptans as H ₂ S | A1, A2 | Quarterly | 01 January |
| Particulates as PM ₁₀ | A10 | Quarterly | 01 January |
| Water usage | --- | Annually | 01 January |
| Energy usage | --- | Annually | 01 January |
| Waste disposal and/or recovery | --- | Annually | 01 January |

Table S4.2: Annual production/treatment

| Parameter | Units |
|-------------------------|--------|
| Production of chemicals | tonnes |

Table S4.3 Performance parameters

| Parameter | Frequency of assessment | Units |
|---------------------------|-------------------------|----------------|
| VOC emissions | 12 months | tonnes/product |
| Hazardous waste/tonne | 12 months | tonnes/product |
| Non hazardous waste/tonne | 12 months | tonnes/product |

Table S4.4 Reporting forms

| Media/parameter | Reporting format | Date of form |
|------------------------|----------------------|--------------|
| Air | Form 'Air 1' | 10/2014 |
| Energy usage | Form 'Energy 1' | 10/2014 |
| Waste Return | --- | --- |
| Water usage | Form 'Water Usage 1' | 10/2014 |
| Performance indicators | Form 'Performance 1' | 10/2014 |

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 activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment

| To be notified immediately | |
|--|--|
| 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 permit condition

| To be notified immediately | |
|---|--|
| 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 |
| | |
| | |
| | |

| In the event 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: | |
|--|--|
| 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.

“*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.

“*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 or background concentration 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.

“*Industrial Emissions Directive*” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“*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.

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

“*Quarterly*” 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.

“*sewer*” means sewer within the meaning of Section 219(1) of the Water Industry Act 1991.

“*SGN*” means ‘The Production of Large Volume Organic Chemicals’, ‘Speciality Organic Chemicals Sector and ‘The Inorganic Chemicals Sector’. The Chemical Sector Guidance Notes EPR 4.01, 4.02 and 4.03, published March 2009.

“*VOC*” means volatile organic compounds. VOCs (high) is by defined in ‘The Categorisation of Volatile Organic Compounds’, reports ref. HMIP/CPR2/41/1/92 and HMIP/CPR2/41/1/183.

“*Waste code*” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005 or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“*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

Schedule 7 - Site plan

