Surrender notice with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Tata Chemicals Europe Limited

Winnington Sodium Bicarbonate
Manufacturing Site
Winnington
Northwich
Cheshire
CW8 4DT

Surrender application number

EPR/SP3630BE/S005

Permit number

EPR/SP3630BE

Winnington Sodium Bicarbonate Manufacturing Site
Permit number EPR/SP3630BE

Introductory note

This introductory note does not form a part of the notice

The following notice gives notice of the surrender in part of an environmental permit.

This is a part surrender of the western part, known as Wallerscote Island, of the installation boundary of the operator's part of the Winnington Site. It is a low risk surrender. The surrendered area has only been used for the storage and delivery of solid sodium carbonate during the period of the EPR permit. There is no change to the scheduled activities for the site.

Any changes made as a result of the part surrender are set out in the Schedules.

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 SP3630BE	Received 31/08/05	Application for inorganic chemical Installation
Notice requiring further information	Notice dated 14/02/06	Responses received 31/03/06 and 07/04/06
Further information	Received 09/05/06	Additional information provided re: proposed Heavy Ash Storage
Further information	Received 02/08/06	Additional information provided re: Impact of Summer Conditions on Emissions of Ammonia to Air
Further information	Received 16/11/06	Additional information re: proposed use of anthracite as a raw material
Further information	Received 11/12/06	Additional information re: proposed use of additional imported carbon dioxide in sodium bicarbonate production
Permit determined EPR/SP3630BE	Issued 09/02/07	Permit issued to Brunner Mond (UK) Ltd
Variation EPR/SP3630BE/V002	01/02/08	Minor variation SP3938XF
Variation EPR/SP3630BE/V003	02/06/09	Minor technical change

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/SP3630BE/V004 (variation and consolidation)	Duly made 20/12/13	Application to vary operations to enable the manufacture of sodium bicarbonate in a stand-alone plant.
Additional information	06/02/14	Email response to determination queries and attachments K, P and Q.
Additional information	28/02/14	Email response to queries included in operator review and updates to attachments K and H.
Additional information	07/03/14	Email notification of additional effluents and final updates to attachments K and H.
Variation determined EPR/SP3630BE/V004	14/03/14	Varied and consolidated permit issued
Application EPR/SP3630BE/S005 (partial surrender)	Duly Made 30/06/15	Application to surrender Wallerscote Island part of installation boundary
Partial Surrender determined.	14/09/15	Consolidated varied permit issued

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Winnington CHP Limited	EPR/EP3337NY	30/08/13
Ineos Technologies Ltd	BP3639XN	05/02/08
Ineos Enterprises Ltd	MP3939XG	05/02/08

End of introductory note

Notice of surrender

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 25 of the Environmental Permitting (England and Wales) Regulations 2010 accepts the surrender in part of

permit number
EPR/SP3630BE

issued to
Tata Chemicals Europe Limited ("the operator")

whose registered office is

Mond House
Winnington
Northwich
Cheshire
CW8 4DT

company registration number **02607081**

to operate part of an installation at

Winnington Sodium Bicarbonate Manufacturing Site
Winnington
Northwich
Cheshire
CW8 4DT

to the extent set out in the schedules.

The notice shall take effect from 14/09/2015.

Name	Date
Anne Nightingale	**14/09/2015**

Authorised on behalf of the Environment Agency

Schedule 1- changes to the permit

Note: The conditions numbers used in this schedule refer to those in the consolidated permit.

The following conditions have been varied as a result of the application made by the operator.

Table 2.2.1a Emission points to air referenced in condition 2.2.1.2.
Table 2.2.1b Emission points to air (upon operation of stand-alone sodium bicarbonate plant only) referenced in condition 2.2.1.2.
Table 2.2.2a Emission limits to air and monitoring referenced in condition 2.2.1.3.
Table 2.2.2b Emission limits to air and monitoring (upon operation of stand-alone sodium bicarbonate plant only) referenced in condition 2.2.1.3.
Schedule 2 Table S2a Reporting of monitoring data referenced in condition 4.1.2.1.
Schedule 2 Table S2b Reporting of monitoring data (upon operation of stand-alone sodium bicarbonate plant only) referenced in condition 4.1.2.1.
Schedule 5 Site Plan and referencing condition 1.2.1

Schedule 2 – consolidated permit

Consolidated permit issued as separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/SP3630BE

This is the consolidated permit referred to in the surrender notice for application EPR/SP3630BE/S005 authorising,

Tata Chemicals Europe Limited ("the operator"),

whose registered office is

Mond House
Winnington
Northwich
Cheshire
CW8 4DT

company registration number **02607081**

to operate part of an installation at

Winnington Sodium Bicarbonate Manufacturing Site
Winnington
Northwich
Cheshire
CW8 4DT

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

Name	Date
Anne Nightingale	**14/09/2015**

Authorised on behalf of the Environment Agency

Conditions

1 General

1.1 Permitted Activities

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

Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	Description of specified activity	Limits of specified activity
3.1A(1)(b) 'Producing lime or magnesium oxide in kilns with a production capacity of more than 50 tonnes per day.'	Production of Calcium Oxide from Coke and Limestone in up to 6 (of 8) lime kilns.	From import of pre-mixed raw materials into the top of the lime kilns to the storage of burnt lime prior to dissolvers.
4.2A(1)(a) 'Producing inorganic chemicals such as - (iv) salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate, cupric acetate, ammonium phosphomolybdate'	Production of Sodium Carbonate (light ash) from Crude Sodium Bicarbonate in up to 4 dryers (secheurs).	From the inlets to the outlets of the 4 Light Ash Secheurs.
	Production of Refined Sodium Bicarbonate by re-carbonation of Sodium Carbonate liquor in up to 3 saturators.	From the inlets to the outlets of the 3 Bicarbonate saturators.
	Production of Calcium Chloride solution in 1 distiller by reaction of calcium hydroxide and ammonium chloride solutions.	From the inlet to the outlet of the Calcium Chloride Distiller.
	The production of Refined Sodium Bicarbonate by precipitation with carbon dioxide gas from a sodium carbonate solution (produced by dissolving solid sodium carbonate in recycled liquor or water).	From receipt of raw materials to dispatch of finished products and waste.
5.4A(1)(a) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC concerning urban waste-water treatment— (ii) physico-chemical treatment.	Treatment of Distiller bottoms effluent flow by: a) solids settlement with aid of flocculating agent and by separation into a denser brine phase b) pH adjustment of clear overflow liquor from settlers Concentrated solids in carrier brine are sent off-site via pipeline for brine borehole disposal. Liquor is discharged to surface waters.	From the exit of the 4 Main Distillers Second Stage Flash and the Calcium Chloride Distiller Second Stage Flash and to the point where the solids in brine cross the Permit boundary.

Table 1.1.1		
Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	**Description of specified activity**	**Limits of specified activity**
Directly Associated Activity		
Receipt and Storage of Raw Materials	Offloading and ground storage of Coke and Limestone via road and rail transport respectively; storage of liquid raw materials, including aqueous ammonia solution, sodium hydrogen sulphide, sodium ferrocyanide, cresylic acid, hydrochloric acid in tanks; storage of other raw materials.	From the point at which raw materials enter the Installation Boundary to the point of introduction of those raw materials into the process.
Integrated operation of the 'Solvay' ammonia-soda process.	Reaction of calcium oxide with water to produce calcium hydroxide suspension ('milk of lime'); carbonation of ammoniated brine solution to precipitate 'crude' sodium bicarbonate; washing and filtration of precipitated 'crude' sodium bicarbonate; compression and recycle of carbon dioxide; re-hydration of 'light ash' and heating to produce sodium carbonate; steam stripping of carbon dioxide and dissolved ammonia from the filtrate from the 'crude' sodium bicarbonate filtration; reaction of calcium hydroxide and ammonium chloride solutions to release ammonia for recycle; heat exchange for heat recovery; absorption of gaseous ammonia and hydrogen sulphide contaminants in brine; storage of intermediate products.	From the inlet to the dissolvers to the inlets of the 4 Light Ash Secheurs; the inlets of the 3 Bicarbonate saturators: and the inlet of the Calcium Chloride Distiller. From the points at which raw materials are introduced to the process. To the outlet of the Second StageFlash of the 4 Main distillers. From the point at which abstracted Cooling Water and Process Water cross the Permit Boundary to the points where all the various effluents (other than those exit the Distillers) enter the watercourse. From the outlets of the 4 Light Ash Secheurs to the delivery point of Light Ash and Heavy Ash to Storage. From the outlet of the 3 Bicarbonate Saturators to the delivery point of Bicarbonate to Storage. From the outlet of the Calcium Chloride Distiller to the delivery point of 35% calcium chloride solution to Storage
Storage and dispatch of final products.	Storage of Sodium Carbonate ('Heavy' Ash, 'Light' Ash) and Refined Sodium Bicarbonate in silos or ground storage. Storage of 35% w/w Calcium Chloride solution in tanks. Loading facilities for tankers or other vehicles.	From the delivery points to Storage of Sodium Carbonate, Sodium Bicarbonate and 35% Calcium Chloride Solution. To the points at which the products exit the Permit Boundary.

Table 1.1.1		
Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	**Description of specified activity**	**Limits of specified activity**
Storage and dispatch of waste materials.	Storage of solid and liquid wastes. Loading facilities for tankers and other vehicles.	From the points of production of waste materials. To the points at which the Waste materials exit the permit Boundary.

1.2 Site

1.2.1 The activities authorised under condition 1.1.1 shall not extend beyond the Site, being the land shown edged in **green** on the Site Plan (but excluding the enclosed areas hatched in red) that represents the extent of the installation covered by this Permit..

1.3 Overarching Management Condition

1.3.1 Without prejudice to the other conditions of this Permit, the Operator shall implement and maintain a management system, organisational structure and allocate resources that are sufficient to achieve compliance with the limits and conditions of this Permit.

1.4 Improvement Programme

1.4.1 The Operator shall complete the improvements specified in Table 1.4.1 by the date specified in that table, and shall send written notification of the date of completion of each requirement to the Agency within 14 days of the completion of each such requirement.

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
1	The Site Protection and Monitoring Programme (SPMP) referred to in Condition 4.1.7 shall include the following: 1 The Agency has assessed that there is a reasonable possibility of causing pollution to land associated with stockpiles of limestone, coke and other potentially polluting materials on unmade ground. Therefore the following are to be included: a) Proposals to provide reference data for the areas where stockpiles of coke, limestone and any other potentially polluting materials are stored on unmade ground b) Proposals to prevent further deterioration of the land due to surface mixing, leaching and other deposition where stockpiles of coke, limestone and other potentially polluting materials are stored on unmade ground 2 a) An assessment as to whether there is 'little likelihood of pollution' or 'reasonable possibility of pollution' from Zone 4a Sodium Ferrocyanide tanker off-loading and Services Zone to 9b Pipeline to DBO Settlers, following the format of Table D2A and B (Assessment of the Likelihood of Land Pollution from the H7 Guidance on the Protection of Land under the PPC Regime). b) An assessment of the adequacy of pollution prevention measures for Zone 10 Burnt Lime and Zone 2a, Service Zone to 2b and Zone 2b,	Complete

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
	Calcium Chloride Solution and whether there is 'little likelihood of pollution' or 'reasonable possibility of pollution', following the format of Table D2A and B (Assessment of the Likelihood of Land Pollution from the H7 Guidance on the Protection of Land under the PPC Regime). Proposals for collection of reference data and actions to address any inadequacies in the pollution prevention measures, testing of these measures or the associated management system shall be included in the SPMP, if it is determined that there is a reasonable possibility of pollution from these activities. 3 An assessment of the potential impact on ground from spillage within the pipe corridors or trenches which are not lined to a standard suitable for secondary containment. Propose actions with a timescale to reduce the risk of any potential for land pollution. 4 Proposals to undertake a survey of the drainage system to identify its current condition and confirm its integrity. This should be scheduled by prioritising individual drainage runs and sumps based on the substances they currently or could contain in the event of a spill or leak. A timetable for the survey shall be included. 5 A description, including recording and reporting procedures, for the testing and inspection of the systems, including the relevant management procedures in place, that have a role in preventing the escape into land of the substances used, stored or produced on site. This will include the storage tanks, any delivery procedures, bunding, including kerbs and ramps, all subsurface structures containing process liquors together with the site surfacing in areas where this has a role in preventing pollution. 6 Proposals for investigations for the collection of reference data from the areas already identified as at 'reasonable risk of pollution' i.e. Service Zone and Zone 4a and 4b: Purified brine pipeline from Ineos Reservoirs Zone 9b to Service Zone to Holford, DBO Brine Slurry, Pipeline to Holford. 7. The Conceptual Site Model shall be reviewed as to its adequacy when proposing the SPMP.	
2	The Operator shall carry out investigations into the techniques required to ensure that releases from the Installation shall not cause a failure of the designated stretches of the River Weaver downstream of the Installation to comply with the Surface Waters (Fishlife) (Classification) Regulations 1997. These investigations may be combined with similar investigations at the upstream Lostock Sodium Carbonate Installation. The Operator shall submit a written report of the investigations, which shall include proposals for implementing any techniques identified as being required, together with a time scale for their implementation. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	C**omplet**e

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
3	The operator shall carry out an assessment of the impact of the ammonia to air release from the Second Stage Flash Steam Vent(s) from the distillation system and shall review BAT options for minimisation of the release via elimination, recovery or other disposal options. The Agency's Guidance note H1 shall be taken into account when assessing options. The operator shall also consider the requirement in Improvement 2 to investigate reduction of ammonia releases to water when carrying out this review. This shall include, but shall not be limited to, options for (i) minimising ammonia input to second stage flash (e.g. optimising distillation process) (ii) recovery of ammonia from the liquid and/or vapour stream back to the process (e.g. recompression of the vapour) (iii) removal of ammonia from the liquid and/or vapour streams and recycling or disposal of any wastes (e.g. sulphuric acid scrubbing of the gaseous stream (iv) optimising heat recovery A report shall be provided to the Agency including the BAT assessment and timetable for implementation of the identified technique(s). The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
4	Carry out appropriate ambient monitoring of ammonia in order to determine current levels of ammonia at the boundaries of the installation. Consideration shall be given to the position of monitoring points to give measurement closest to sensitive receptors e.g. local to the nearest neighbour along the main Winnington Lane Site Entrance road; at the site boundary nearest to SSSI Witton Limebeds; opposite Anderton Boatlift; and at the south of the site local to the nearest housing. The purpose of this monitoring shall be to indicate the validity of the air dispersion modelling provided in the Application. A report on the monitoring and analysis of the data shall be submitted to the Agency.	Complete
5	Review all environmentally critical stock tanks and associated bunds as proposed in Section 14 of the Application Item 14.4 with reference to the Agency Guidance Note S4.03 Section 2.2.5 and Agency Guidance Note H7. Propose any improvements required to minimise risk of loss of containment to land and to surface waters. A report shall be provided to the Agency with a timetable for any improvements identified. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
6	The operator shall carry out appropriate investigations to determine; a) the form in which cyanide enters surface waters via effluent streams b) the environmental impact of the cyanide on the watercourses in its state upon entering and further downstream Reports on the investigations shall be provided to the Agency.	Complete
7	Carry out an assessment of all emissions of heavy metals to water. This shall include As, Cd, Cr, Cu, Hg, Ni, Pb and Zn. A report on the results of the assessment shall be provided to the Agency.	Complete

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
8	Carry out a review of potential sources of fugitive dust emissions. This shall include, but shall not be limited to, waste storage arrangements, handling of intermediate and final products, offloading of raw materials and loading of products. Identify those with the highest potential for losses and propose improvements taking account of BAT. A report shall be provided to the Agency on the outcome of this review and shall include a timetable for implementation of improvements proposed. (This is in addition to the annual review of fugitive emissions as required under Condition 4.1.4.) The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
9	Prepare a formal structured accident management plan in line with the Agency's Inorganic Sector Guidance Note with particular regard to Section 2.8. This shall include appropriate discussion with the other operators of the Winnington Sodium Carbonate manufacturing site in order to identify and address any hazards which have an impact on accidents occurring across permit boundaries. Prepare an action plan for any proposed improvements. Submit a report describing the accident management plan, the action plan for any proposed improvements, including time scales, to the Agency. The operator shall implement the accident management plan and the action plan of proposed improvements from the date of approval in writing by the Agency to the time scales included in the approval. (See Condition 2.8.1)	Complete
10	Develop a noise management plan in line with the Agency's Horizontal Guidance for Noise H3 Part 2 Noise Assessment and Control with particular regard to Section 3.3.4 and Appendix 4. This shall include, but shall not be limited to, appropriate discussion with other operators of the Winnington Sodium Carbonate manufacturing site in order to identify and address any opportunities for improved control of noise across permit boundaries and to minimise the overall noise levels emitted by the Installation. In particular, noisy operations at start-up, shutdown and abnormal operation including venting of steam shall be reviewed. Proposals for appropriate noise surveys, with reference to the H3 Guidance, shall also be included. Prepare an action plan for any proposed improvements. Submit a report describing the noise management plan and any proposed timescales to the Agency. The operator shall implement the noise management plan and the action plan of proposed improvements from the date of approval in writing by the Agency to the time scales included in the approval.	Complete

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
11	Propose a technique(s) by which breakthrough of particulate matter to air from bag filter systems, which exhaust external to enclosed buildings, can be detected. The technique should aim to identify sudden failures of the filter system as well as gradual deterioration and should take account of the requirement to achieve the emission limit values in Table 2.2.2. The techniques considered shall include, but shall not be limited to, appropriate particulate monitors on the release points linked to DCS alarms and/or indication. A rolling programme for validation of these monitors by an appropriate sampling and analysis technique, taking into account Improvement Requirement 18 shall be proposed. A report shall be submitted to the Agency and shall include a timescale for implementation. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
12	Propose methods for continuous monitoring of flow, pH, ammonia and temperature on release points W11 and W12. Monitoring of alternative process variables may be acceptable but a validation method should be proposed. A report shall be submitted to the Agency and shall include a time scale for implementation. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
13	Propose a method of measurement and/or calculation of Carbon Monoxide Particulate Matter, Sulphur Dioxide and Nitrogen Oxides (as NO_2) releases to air from Release Points A1/ 1-5, A3/1-4 and A7 in order to demonstrate compliance with the emission limit values set in Table 2.2.2. A validation method for any calculations shall be proposed, which shall include an estimation of the errors in the methods proposed. A report shall be submitted to the Agency. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
14	The operator shall assess the environmental impact of the methods of starting up and shutting down the activities or parts of the activities, including emergency shutdowns and subsequent start-ups. This shall include potential for loss of containment, increased noise, increased fugitive releases, odour complaints and increased risk of accidents. Appropriate additional monitoring shall be carried out during these periods in order to quantify any impacts. The techniques (including procedures and equipment) shall be reviewed and changes proposed in order to minimise the environmental impact of these operations in line with BAT. A report shall be submitted to the Agency to include a summary of the assessment and any changes proposed. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
15	An investigation shall be carried out, with regard to BAT, into the options to reduce the emissions of phenol below 400 μg/l and the total of p-cresol, m-cresol and o-cresol to below 1mg/l in a total effluent flow of 130,000 m^3/day from Release Points W4, W5, W6, W9, W11 and W12. A report shall be submitted to the Agency on the results of the investigations along with any proposals for improvements including timescales. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
16	The operator shall carry out investigations into the potential for energy saving by installation of centrifuges to reduce the water content of the crude sodium bicarbonate before calcination. An assessment, including a cost-benefit analysis, taking into account any impacts on other parts of the process, shall be carried out. A report shall be submitted to the Agency with the results of the investigations and assessment.	Complete
17	Propose techniques for installation of a wet scrubbing system on the Milk of Lime dissolver vents. A report shall be provided to the Agency and shall include a timetable for the installation. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
18	The operator shall review the requirements for compliance with the Agency's MCERTS monitoring certification system as described in Condition 2.10.4. The operator shall submit proposals to the Agency for achieving compliance with these standards for all monitoring required by this permit. This shall include equipment, procedures, operator training and maintenance of equipment amongst others. The techniques identified shall be implemented by the Operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
19	Further to the work undertaken for Improvement Requirement 5, the operator shall review all new and remaining environmentally critical stock tanks and associated bunds with reference to Guidance Note EPR4.03 Section 2.2 and the section on releases from liquids in containers in 'How to Comply'. The operator shall propose any improvements required to minimise risk of loss of containment to land and to surface waters. A report shall be provided to the Environment Agency with a timetable for any improvements identified. The techniques identified shall be implemented by the operator from the date of approval in writing by the Environment Agency in accordance with the time scales included in the approval.	31 October 2015
20	Building on work undertaken for Improvement Requirement 8 and Improvement Requirement 11, the operator shall provide a report to the Environment Agency to address the monitoring and control of all new and remaining point source or fugitive emissions of particulate matter. The report shall aim to provide evidence that the operations are to BAT and that the emissions are insignificant, with the proposal of any necessary improvements. Following approval of this report by the Environment Agency and the satisfactory implementation of any improvements, the emission limit values and monitoring requirements for particulate matter in Table 2.2.2 will be removed.	31 October 2015

Table 1.4.1: Improvement programme		
Reference	**Requirement**	**Date**
21	The operator shall update the Accident Management Plan described in Improvement Requirement 9, with reference to the section on accidents and incidents in 'How to Comply', to include all new concerns and any updates to those existing. The operator shall implement the accident management plan from the date of approval in writing by the Environment Agency.	Complete
22	Once the stand-alone sodium bicarbonate plant is operating and the redundant activities have been decommissioned, the operator shall conduct a noise monitoring survey (having first agreed the methodology with the Environment Agency) to quantify the noise on site and, if necessary, identify additional measure to ensure noise levels do not cause pollution outside the site boundary. The operator shall provide a report to the Environment Agency detailing noise survey results and include a timetable for the implementation of any recommendations made as a result of the noise survey. Following this, the operator shall update the Noise Management Plan described in Improvement Requirement 10, which identifies and minimises the risks of pollution from noise and vibration. The operator shall implement the approved noise management plan, from the date of approval by the Environment Agency.	Complete
23	The operator shall update the assessment provided under Improvement Requirement 14 on starting up and shutting down the activities to include any new concerns. A report shall be submitted to the Environment Agency to include a summary of the assessment and any changes proposed. The techniques identified shall be implemented by the operator from the date of approval in writing by the Agency to the time scales included in the approval.	Complete
24	The operator shall notify the Environment Agency when the stand-alone sodium bicarbonate plant is fully operational in its own right and all decommissioning activities are complete. The connection to sewer referenced in Table 2.2.6 will have been made. The operator must confirm that any emissions related to the decommissioned activities and associated land and buildings are no longer possible, with evidence from monitoring where relevant to show that there are no contaminated emissions from these areas. Following acknowledgement of this from the Environment Agency, Table 2.2.1b, Table 2.2.2b, Table 2.2.4b, Table 2.2.5b, Table S2b and Table S4.2b will come into force in place of Table 2.2.1a, Table 2.2.2a, Table 2.2.4a, Table 2.2.5a, Table S2a and Table S4.2a respectively.	Monthly progress updates to be provided from issue of V004 until final notification of completion of the condition is made.
25	The operator shall confirm to the Environment Agency in writing that all change-over operations to the stand-alone sodium bicarbonate plant have been completed and the agreements related to this made under the minor operational change will no longer be applicable. At this point in time, the operator should also confirm that connection to the United Utilities sewer has been made and that the RSB Purge will normally discharge via that route, as per Table 2.2.6.	Complete

1.4.2 Where the Operator fails to comply with any requirement by the date specified in Table 1.4.1 the Operator shall send written notification of such failure to the Agency within 14 days of such date.

1.5 Minor Operational Changes

1.5.1 The Operator shall seek the Agency's written agreement to any minor operational changes under condition 2.1.1 of this Permit by sending to the Agency: written notice of the details of the proposed change including an assessment of its possible effects (including waste production) on risks to the environment from the Permitted Installation; any relevant supporting assessments and drawings; and the proposed implementation date.

1.5.2 Any such change shall not be implemented until agreed in writing by the Agency. As from the agreed implementation date, the Operator shall operate the Permitted Installation in accordance with that change, and relevant provisions in the Application shall be deemed to be amended.

1.5.3 When the qualification "unless otherwise agreed in writing" is used elsewhere in this Permit, the Operator shall seek such agreement by sending to the Agency written notice of the details of the proposed method(s) or techniques.

1.5.4 Any such method(s) or techniques shall not be implemented until agreed in writing by the Agency. As from the agreed implementation date, the Operator shall operate the Permitted Installation using that method or technique, and relevant provisions in the Application and the Site Protection and Monitoring Programme, as the case may be shall be deemed to be amended.

1.6 Pre-Operational Conditions

1.6.1 The following Parts of the Permitted Installation shall not be brought into operation until the following measures have been completed and the Agency has been notified in writing of this:

1.6.1.1 The operator shall confirm the details of the design of the proposed Sodium Carbonate storage facility to be built in Zone 5 (dry-side) in W002, as described in Section 1.2 of the Application, Response to Schedule 4 Question 11 of the Application (received 31/03/06) and Additional Information (received 09/05/06). Any changes to the design shall be reported, as well as a description of those aspects of the design, which could not be confirmed at the time of the Application. A report, including any relevant changes, shall be submitted at least 3 months before the planned operation of the new storage facility.

1.6.1.2 The Agency shall be notified of commencement of operation of the new storage facility for Refined Sodium Bicarbonate proposed for the redundant sodium silicate production area (as described in Sect 1.2 and Response to Schedule 4 Notice q 16). No further information is required unless there are relevant changes to the proposals. If there are changes to the application details, these shall be notified at least 3 months before commencement of the operation.

1.6.1.3 The operator shall provide the Agency with an assessment of any predicted differences in environmental effects of emissions to air, water or land between using coke as a fuel in the limekilns and using the type of anthracite or similar high carbon solid fuel proposed by the operator. This shall be provided at least 3 months prior to the proposed use of the fuel in the limekilns.

1.6.1.4 The operator shall provide the Agency with an assessment of any predicted differences in environmental effects of emissions when using up to 100% carbon dioxide to produce sodium bicarbonate as proposed. This shall be provided at least 3 months prior to the proposed change.

1.7 Off-site Conditions

1.7.1 There are no off-site conditions.

2 Operating conditions

2.1 In-Process Controls

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
Application	The response to questions B2.1 and B2.2 given in pages 15 - 57 of the Application Form in Section 1 of the Application (excluding references to Appendices 2.1 and 2.2 of the Application and excluding any conclusions made regarding BAT indicated in any other Sections of the Application referred to in the responses to questions B2.1 and B2.2) Section 3 of the Application.	31/08/05
Response to Schedule 4 Notice	Responses to all items excluding 20, 32, 47, 49, 51, 52.	31/03/06 and 07/04/06
Supplementary Information to Response 11 regarding Proposed Heavy Ash Storage	All.	09/05/06.
Additional Information – Burning of Anthracite or similar high carbon fuels.	All	17/11/06
Additional Information – Use of up to 100% carbon dioxide as a raw material in producing sodium bicarbonate.	All	11/12/06
Application EPR/SP3630BE/V004	Application form Part C3 - Section 3 on Operating Techniques, Table 3 Technical Standards and attachments E, G, H and L.	20/12/13
Additional information	Email response to determination queries.	06/02/14
Additional information	Email response to queries included in operator review.	28/02/14
Additional information	Email notification of additional effluents and final versions of attachments K and H.	07/03/14

2.1.2 The Permitted Installation shall, subject to the other conditions of this Permit, be operated using the techniques and in the manner described in the Site Protection and Monitoring Programme submitted under condition 4.1.7 of this Permit (as amended from time to time under condition 4.1.7), or as otherwise agreed in writing by the Agency.

2.2 Emissions

2.2.1 Emissions to Air, (including heat, but excluding Odour, Noise or Vibration) from Specified Points

2.2.1.1 This Part 2.2.1 of this Permit shall not apply to releases of odour, noise or vibration.

2.2.1.2 Emissions to air from the emission points in Table 2.2.1a or Table 2.2.1b shall only arise from the source(s) specified in that Table.

Table 2.2.1a : Emission points to air

Emission point reference or description	Source	Location of emission point
A1/1-6	Kiln Gas via Wasting Gas Fans A-F	Release point 17 (L/A1) on Diagram W004 in Application Appendix 3.2
A2/1-4	Milk of Lime Dissolver 1-4	Release points 18 (L/A6) and 19 (L/A7) on Diagram W004 in Application Appendix 3.2
A3/1-4	Solvay Tower Washer 1-4	Release point 1 (SA/A1) on Diagram W004 in Application Appendix 3.2
A4	Primary Magma Filter Vacuum Washer, occasionally other vac systems	Release Point 2 (SA/A5) on Diagram W004 in Application Appendix 3.2
A5	Secondary Magma Filter Vacuum Washer	Release Point 3 (SA/A6) on Diagram W004 in Application Appendix 3.2
A6/1-2	TGT/Heavy Ash Secheur Scrubbers 1-2	Release Points 4 (SA/A8) and 5 (SA/A9) on Diagram W004 in Application Appendix 3.2
A7	Refined Bicarbonate Scrubber ex Saturator	Release Point 16 (SA/A41) on Diagram W004 in Application Appendix 3.2
A8/1-10	Dust Filter Units on Lime Plant	Zones 7a and 10 on Diagram W002 in Application Appendix 3.2
A9/1-29	Dust Filter Units on Sodium Carbonate and Bicarbonate Plants (Winnington)	Zones 3a, 3b and 5 on Diagram W002 in Application Appendix 3.2
A11	Dust Filter Units on Sodium Carbonate Storage (Winnington)	Zone 5 on Diagram W002 in Application Appendix 3.2
A12	Fugitive Second Stage Flash ex Distillers	Release Point 10 (SA/A44) on Diagram W004 in Application Appendix 3.2
All other Release Points to Air	Fugitive Releases. As described in Application Section 9 H1 Module 2 Definition of Air Release Points.	Release Points 6, 7, 8, 9, 11, 12, 13, 14, 15 on Diagram W004 in Application Appendix 3.2
Note: see Improvement Requirement 24 for the remit of this table		

Table 2.2.1b : Emission points to air (upon operation of stand-alone sodium bicarbonate plant only)		
Emission point reference or description	**Source**	**Location of emission point**
A7	Refined Bicarbonate Scrubber ex Saturator (Intermittent)	Release Point 16 on Attachment P in Application EPR/SP3630BE/V004
A9/1-4	Dust Filter Units on Sodium Bicarbonate Plant	Release Points A, B, C and D on Attachment P in Application EPR/SP3630BE/V004
Note: see Improvement Requirement 24 for the remit of this table		

2.2.1.3 The limits for emissions to air for the parameter(s) and emission point(s) set out in Table 2.2.2a or Table 2.2.2b shall not be exceeded.

Table 2.2.2a : Emission limits to air and monitoring				
Emission point reference	**Parameter and Units**	**Limit** Note 1	**Monitoring frequency** Note 6	**Monitoring method**
A1/1-6	Carbon Monoxide mg/m^3	**15000**	As per response to Improvement Condition 13 as approved in writing by the Agency.	As per responses to Improvement Conditions 13 and 18 as approved in writing by the Agency.
	Total Particulate Matter mg/m^3	**500**	As per response to Improvement Condition 13 as approved in writing by the Agency.	As per responses to Improvement Conditions 13 and 18 as approved in writing by the Agency.
	Particulate Matter less than 10 μm (PM_{10}) mg/m^3	**250**		
	Nitrogen Oxides (as NO_2) mg/m^3	**200**	As per response to Improvement Condition 13 as approved in writing by the Agency.	As per responses to Improvement Conditions 13 and 18 as approved in writing by the Agency.
	Sulphur dioxide mg/m^3	**200**	As per response to Improvement Condition 13 as approved in writing by the Agency.	
A3/1-4	Carbon Monoxide mg/m^3	**16500**	As per response to Improvement Condition 13 as approved in writing by the Agency.	As per responses to Improvement Conditions 13 and 18 as approved in writing by the Agency.
	Ammonia mg/m^3	**45** Note 2 90 Note 3	Continuous Note 5 (24-hour composite sample)	BM/TM/ENV/005 or Improvement Condition 18 response as approved in writing by the Agency
	Hydrogen Sulphide mg/m^3	**15**	Continuous Note 5 (24-hour composite sample)	
A4	Ammonia mg/m^3	**50** Note 2 90 Note 3 140 Note 4	Continuous Note 5 (24-hour composite sample)	BM/TM/ENV/005 or Improvement Condition 18 response as approved in writing by the Agency

Table 2.2.2a : Emission limits to air and monitoring				
Emission point reference	**Parameter and Units**	**Limit** Note 1	**Monitoring frequency** Note 6	**Monitoring method**
A5	Ammonia mg/m^3	**50** Note 2 90 Note 3 140 Note 4	Continuous Note 5 (24-hour composite sample)	BM/TM/ENV/005 or Improvement Condition 18 response as approved in writing by the Agency
A7	Carbon Monoxide mg/m^3	**11250**	As per response to Improvement Condition 13 as approved in writing by the Agency.	As per responses to Improvement Conditions 13 and 18 as approved in writing by the Agency.
A8/1-10	Particulate matter mg/m^3	**20**	As per response to Improvement Condition 11 as approved in writing by the Agency	As per responses to Improvement Conditions 11 and 18 as approved in writing by the Agency.
A9/1-29	Particulate matter mg/m^3	**20**	As per response to Improvement Conditions 11 as approved in writing by the Agency	As per responses to Improvement Conditions 11 and 18 as approved in writing by the Agency.
A11	Particulate matter mg/m^3	**20**	As per response to Improvement Conditions 11 as approved in writing by the Agency	As per responses to Improvement Conditions 11 and 18 as approved in writing by the Agency.
Note: see Improvement Requirement 24 for the remit of this table				

Note 1: See Section 6.1.3 for reference conditions

Note 2: If the inlet brine temperature* is less than or equal to 27.0 °C for more than 12 hours in the 24 hour sampling period, this limit shall be complied with if the average of 7 consecutive 24-hour average results does not exceed the limit.

Note 3: If the inlet brine temperature* is greater than 27.0 °C for more than 12 hours in the 24 hour sampling period, this limit shall be complied with if each 24-hour average result does not exceed the limit.

Note 4: If the inlet brine temperature* is greater than 27.0 °C for more than 12 hours in the 24 hour sampling period AND if plant rates reduce below 1100 tonne gross ash produced in that 24 hour period, this limit shall be complied with if each 24-hour average result does not exceed the limit.

* The inlet brine temperature shall be the temperature measured at the point nearest and prior to the introduction of brine to the first process scrubbing duty.

Note 5: A composite sample is taken usually over a 24-hour period, analysis carried out and the 24-hour average calculated. The period of sampling may be extended up to 4 days with the 24-hour average calculated for the 2-, 3- or 4-day period over weekends and Bank Holidays, unless abnormal process conditions are observed which indicate that the emissions from these points may approach the relevant limit. In this case sampling and analysis over a 24-hour period shall be undertaken to demonstrate compliance with the relevant limit, or otherwise.

Note 6: Or as agreed in writing with the Environment Agency, where emissions are no longer made.

Table 2.2.2b : Emission limits to air and monitoring (upon operation of stand-alone sodium bicarbonate plant only)				
Emission point reference	**Parameter and Units**	**Limit** Note 1	**Monitoring frequency** Note 1	**Monitoring method** Note 1
A9/1-4	Particulate matter mg/m^3	**20**	As per response to Improvement Conditions 11 as approved in writing by the Agency	As per responses to Improvement Conditions 11 and 18 as approved in writing by the Agency.
Note: see Improvement Requirement 24 for the remit of this table				

Note 1: Limits and monitoring to be removed following completion of Improvement Requirement 20, following evidence demonstrating compliance with BAT. See Section 6.1.3 for reference conditions.

2.2.2 Emissions to water (other than groundwater), including heat, from specified points

2.2.2.1 This Part 2.2.2 of this Permit shall not apply to releases of odour, noise or vibration or to releases to groundwater.

Emissions to water (other than sewer)

2.2.2.2 Conditions 2.2.2.3 - 2.2.2.6 shall not apply to emissions to sewer.

2.2.2.3 Emissions to water from the emission point(s) specified in Table 2.2.4a or Table 2.2.4b shall only arise from the source(s) specified in that Table.

Table 2.2.4a: Emission point to water		
Emission Point Reference or description	**Source**	**Receiving Water**
W4 on Diagram W004 in Application Appendix 3.2	Air Compressor Cooling Water and other Utilities water from East end of the plant. Surface Drainage including rail track Drainage.	Weaver Navigation
W5* on Diagram W004 in Application Appendix 3.2	Gas compressor cooling water, Bicarbonate Plant cooling water, Surface Drainage, Cooling water via east end of 26 drain. (Occasionally - Gas scrubber water,– normally directed to No 6 drain) CHP effluents	Weaver Navigation
W6 on Diagram W004 in Application Appendix 3.2	Bicarbonate plant ring tile tower scrubber water, Condensate from the Bicarbonate plant driers. Gas Scrubber Water, Cooling water from Utilities, Surface Drainage	Weaver Navigation
W9* on Diagram W004 in Application Appendix 3.2	Vat Liquor Cooling Water, Strong Gas Main spray run-off, Vat Liquor Pump cooling water, Common spare cooler water, mixed brine cooler water, cooler back wash water, Emergency hot grade 1 water dump (safety pressure relief). Surface Drainage	Weaver Navigation
W11 on Diagram W004 in Application Appendix 3.2	CaCl2 Cooling, Vacuum Ejector & Wash waters, Dissolved salts from Calcium Chloride plant, Kiln Gas Scrubber Water, Heavy Ash Cooling water (Normally directed to 12 drain), Ineos Enterprises ECP drainage. Surface Drainage, including water from outside the installation boundary at the south end of the site. (DBO liquors occasionally) (CHP Effluents occasionally)	Weaver Navigation
W12 on Diagram W004 in Application Appendix 3.2	Clear DBO Liquors from Settlers, Heavy Ash plant Cooling Waters Wash water from the water purification plant, Secheur plant bearing cooling water, Kiln gas lute water, CHP break tank overflow, Hot purified water stock tank overflow, Surface Drainage (Occasionally Kiln Gas Scrubber Water)	Weaver Flood Course
All other release points to surface water on Diagram W004 in Application Appendix 3.2	Surface Drainage Only.	Weaver Flood Course/ Weaver Navigation
Note: see Improvement Requirement 24 for the remit of this table		

* A connecting drain (shown in Drawing W005) with a high point exists between the drains leading to emission points W5 and W9. This allows flow between the drains if either is accidentally blocked.

Table 2.2.4b: Emission point to water (upon operation of stand-alone sodium bicarbonate plant only)		
Emission Point Reference or description	**Source**	**Receiving Water**
W4 on Diagram W004 in Application Appendix 3.2	Air Compressor Cooling Water and other Utilities water from East end of the plant Surface Drainage including rail track Drainage	Weaver Navigation
W5* on Diagram W004 in Application Appendix 3.2	RSB Gas Compressor Cooling Water RSB Recycle Gas Cooling Water RSB Liquor Cooling Water RSB Gas Coolers Condensate RSB Gas Coolers Cooling Water Bicarbonate Plant Surface Drainage Winnington CHP effluents	Weaver Navigation
W6 on Diagram W004 in Application Appendix 3.2	RSB Drier Gas Direct Cooling Water RSB Drier Heater Condensate Utilities water Surface Drainage	Weaver Navigation
W9* on Diagram W004 in Application Appendix 3.2	Water Cooler Cooler back wash water Water Relief (including emergency hot grade 1 water dump (safety pressure relief)) Decarbonator Gas Condensate Decarbonator Reboiler Flash Steam Condensate Surface Drainage RSB Purge (only when S1 is unavailable)	Weaver Navigation
W11 on Diagram W004 in Application Appendix 3.2	Surface Drainage, including water from outside the installation boundary at the south end of the site. Winnington CHP Effluents (occasionally)	Weaver Navigation
W12 on Diagram W004 in Application Appendix 3.2	Surface Drainage CHP break tank overflow (rarely) Hot purified water stock tank overflow (rarely)	Weaver Flood Course
All other release points to surface water on Diagram W004 in Application Appendix 3.2	Surface Drainage Only.	Weaver Flood Course/ Weaver Navigation
Note: see Improvement Requirement 24 for the remit of this table		

* A connecting drain (shown in Drawing W005) with a high point exists between the drains leading to emission points W5 and W9. This allows flow between the drains if either is accidentally blocked

2.2.2.4 The limits for the emissions to water for the parameter(s) and emission point(s) set out in Table 2.2.5a or Table 2.2.5b shall not be exceeded.

2.2.2.5 Where a substance is specified in Table 2.2.5a or Table 2.2.5b 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.

Table 2.2.5a : Emission limits to water and monitoring				
Emission point reference	**Parameter** Note 1	**Limit (including Reference Period)** Note 2, Note 5	**Monitoring frequency** Note 3	**Monitoring method**
W4	Flowrate (m^3/day)	**5000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Temperature (°C)	**+ 15** (monthly average) **+20** (sample)	3 times per week	Method in use at date of permit issue or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	pH	**5-9.5** (sample)	3 times per week	BM/TM/ENV/007 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50** (sample)	3 times per week	BM/TM/ENV/001 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
W5	Flowrate (m^3/day)	**20000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as per Response to Improvement Condition 18 as approved in writing by the Agency
	Incremental Temperature(°C)	**+15** (monthly average) **+20** (sample)	3 times per week	Method in use at date of permit issue or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	pH	**5-9.5** (sample)	3 times per week	BM/TM/ENV/007 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Total Ammonia (as N) (mg/l)	**+3** (monthly average) **+10** (sample)	3 times per week	BM/TM/ENV/002 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50**(sample)	3 times per week	BM/TM/ENV/001 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
W6	Flowrate (m^3/day)	**15000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as per Response to Improvement Condition 18 as approved in writing by the Agency
	Incremental Temperature(°C)	**+20** (monthly average) **+35** (sample)	3 times per week	Method in use at date of permit issue or as per Response to Improvement Condition 18 as approved in writing by the Agency.

Table 2.2.5a : Emission limits to water and monitoring				
Emission point reference	**Parameter** Note 1	**Limit (including Reference Period)** Note 2, Note 5	**Monitoring frequency** Note 3	**Monitoring method**
	pH	**5-9** (sample)	3 times per week	BM/TM/ENV/007 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Total Ammonia (as N) (mg/l)	**+13** (monthly average) **+20** (sample)	3 times per week	BM/TM/ENV/002 or as per Responses to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50** (sample)	3 times per week	BM/TM/ENV/001 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
W9	Flowrate (m^3/day)	**26000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as per Response to Improvement Condition 18 as approved in writing by the Agency
	Temperature(°C)	**45** (monthly average) **60** (sample)	3 times per week	Method in use at date of permit issue or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	pH	**5-9.5** (sample)	3 times per week	BM/TM/ENV/007 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Total Ammonia (as N) (mg/l)	**+4** (Monthly average) **+20** (sample)	3 times per week	BM/TM/ENV/002 or as per Response to Improvement Condition 18 as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+80** (sample)	3 times per week	BM/TM/ENV/001 or as per response to Improvement Condition 18 as approved in writing by the Agency.
W11 Note 4	Flowrate (m^3/day) -When DBO liquors diverted to W11.	**30000** (monthly average) 50000 (monthly average)	Daily	Calculated as for Application Section 3.8.1 or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency
	Temperature(°C) -When DBO liquors diverted to W11.	**40** (sample) 50 (sample)	Daily	Method in use at date of permit issue or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency.
	pH -When DBO liquors diverted to W11.	**5-10** (sample) 5-11 (sample)	Daily	BM/TM/ENV/007 or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency.

Table 2.2.5a : Emission limits to water and monitoring				
Emission point reference	**Parameter** Note 1	**Limit (including Reference Period)** Note 2, Note 5	**Monitoring frequency** Note 3	**Monitoring method**
	Total Ammonia (as N) (mg/l) -When DBO liquors diverted to W11.	**35** (monthly average) **55** (sample) 75 (monthly average) 100 (sample)	Daily	BM/TM/ENV/002 or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency.
	Suspended Solids (mg/l) -When DBO liquors diverted to W11.	**200** (monthly average) **300** (sample) 300 (monthly average) 500 (sample)	Daily	BM/TM/ENV/001 or as per response to Improvement Condition 18 as approved in writing by the Agency
	Phenol (mg/l)	**1** (sample)	Monthly (when DBO liquors diverted to W11)	BM/TM/ENV/003 or as per response to Improvement Condition 18 as approved in writing by the Agency.
	Total Cresols (mg/l)	**2** (sample)	Monthly (when DBO liquors diverted to W11)	BM/TM/ENV/003 or as per response to Improvement Condition 18 as approved in writing by the Agency.
	Total Cyanide (mg/l)	**5** (sample)	Monthly (when DBO liquors diverted to W11)	BM/TM/ENV/006 or as per response to Improvement Condition 18 as approved in writing by the Agency.
W12	Flowrate (m^3/day)	**20000** (monthly average)	Daily	Calculated as for Application Section 3.8.1 or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency
	Temperature(°C)	**75** (sample)	Daily	Method in use at date of permit issue or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency.
	pH	**5-11** (sample)	Daily	BM/TM/ENV/007 or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency.

Table 2.2.5a : Emission limits to water and monitoring				
Emission point reference	**Parameter** Note 1	**Limit (including Reference Period)** Note 2, Note 5	**Monitoring frequency** Note 3	**Monitoring method**
	Total Ammonia (as N) (mg/l)	**155** (monthly average) **230** (sample)	Daily	BM/TM/ENV/002 or as per Responses to Improvement Conditions 12 and 18 as approved in writing by the Agency.
	Suspended Solids (mg/l)	**600** (monthly average) **900** (sample)	Daily	BM/TM/ENV/001 or as per response to Improvement Condition 18 as approved in writing by the Agency.
	Phenol (mg/l)	**1** (sample)	Monthly	BM/TM/ENV/003 or as per response to Improvement Condition 18 as approved in writing by the Agency.
	Total Cresols (mg/l)	**2** (sample)	Monthly	BM/TM/ENV/003 or as per response to Improvement Condition 18 as approved in writing by the Agency.
	Total Cyanide (mg/l)	**5** (sample)	Monthly	BM/TM/ENV/006 or as per response to Improvement Condition 18 as approved in writing by the Agency.
Note: see Improvement Requirement 24 for the remit of this table				

Note 1: Any reference to 'incremental' means the difference between that parameter measured in the effluent and the same parameter measured in the incoming River Weaver water on the same day.

Note 2: Any reference to 'monthly average' means the average of the monitoring or calculation results for each calendar month.

Note 3: Any reference to 'daily' means normal working days, excluding weekends and bank holidays. Monitoring frequency on an emission point shall be increased if abnormal process conditions are observed which indicate that the emissions from this point may approach the relevant limit. In this case, appropriate sampling and analysis shall be undertaken to demonstrate compliance with the relevant limit, or otherwise.

Any reference to '3 times per week' means there shall be a period of at least 24 hours between consecutive samples.

Note 4: W11 is used as a back-up facility for discharge of clear DBO liquors. It is authorised for occasional use, only when W12 is unavailable, and only when a partial dam is in place to prevent back-flow to the Navigation Cut by forcing the flow over the weir. Times of diversion from W12 to W11 shall be recorded. Whenever the duration of diversion exceeds 24 hours, the Environment Agency shall be notified without delay, and the outfall shall be sampled and tested for the specified parameters. When diversion is expected to exceed 48 hours, prior approval shall be sought from the Environment Agency. In these cases, the combined effluent load limits for W11 and W12 for all determinands shall not be exceeded.

Note 5: Compliance shall be achieved if one sample out of the samples taken in a rolling 7-day period exceeds the sample limit by not more than 25% of the limit for incremental total ammonia, incremental suspended solids, total ammonia and suspended solids.

Compliance shall be achieved if one sample out of the samples taken in a rolling 7-day period exceeds the sample limit by not more than 0.5 of a pH unit for pH and by not more than 5°C for temperature or incremental temperature.

If samples are taken in addition to those required in Table 2.2.5a above to assist with investigations, then these shall not be taken into account when reporting on compliance. This does not preclude any requirements for Notifications under Part 5 of this Permit

Table 2.2.5b : Emission limits to water and monitoring (upon operation of stand-alone sodium bicarbonate plant only)

Emission point reference	**Parameter** Note 1	**Limit (including Reference Period)** Note 2, Note 4	**Monitoring frequency** Note 3	**Monitoring method**
W4	Flowrate (m^3/day)	**5,000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as approved in writing by the Agency.
	Incremental Temperature (°C)	**+ 15** (monthly average) **+20** (sample)	3 times per week	Method in use at date of permit issue or as approved in writing by the Agency.
	pH	**5.5-9.5** (sample)	3 times per week	BM/TM/ENV/007 or as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50** (sample)	3 times per week	BM/TM/ENV/001 or as approved in writing by the Agency.
W5	Flowrate (m^3/day) - when diverted from W9*	**20,000** (monthly average) **45,000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as approved in writing by the Agency
	Incremental Temperature(°C)	**+15** (monthly average) **+20** (sample)	3 times per week	Method in use at date of permit issue or as approved in writing by the Agency.
	pH	**5.5-9.5** (sample)	3 times per week	BM/TM/ENV/007 or as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50** (sample)	3 times per week	BM/TM/ENV/001 or as approved in writing by the Agency.
W6	Flowrate (m^3/day)	**10,000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as approved in writing by the Agency
	Incremental Temperature(°C)	**+20** (monthly average) **+35** (sample)	3 times per week	Method in use at date of permit issue or as approved in writing by the Agency.
	pH	**5.5-9** (sample)	3 times per week	BM/TM/ENV/007 or as approved in writing by the Agency.

Table 2.2.5b : Emission limits to water and monitoring (upon operation of stand-alone sodium bicarbonate plant only)				
Emission point reference	**Parameter** Note 1	**Limit (including Reference Period)** Note 2, Note 4	**Monitoring frequency** Note 3	**Monitoring method**
	Incremental Suspended Solids (mg/l)	**+50** (sample)	3 times per week	BM/TM/ENV/001 or as approved in writing by the Agency.
W9	Flowrate (m^3/day)	**30,000** (monthly average)	3 times per week	Calculated as for Application Section 3.8.1 or as approved in writing by the Agency
	- when diverted from W5*	**45,000** (monthly average)		
	Incremental Temperature(°C)	**+20** (monthly average)	3 times per week	Method in use at date of permit issue as approved in writing by the Agency.
	Temperature(°C)	**60** (sample)		
	pH	**5.5-9.5** (sample)	3 times per week	BM/TM/ENV/007 or as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50** (sample)	3 times per week	BM/TM/ENV/001 or as approved in writing by the Agency.
W11 – only when CHP effluent diverted to W11	Temperature(°C)	**45** (sample)	Daily	Method in use at date of permit issue or as approved in writing by the Agency.
	pH	**5.5-10** (sample)	Daily	BM/TM/ENV/007 or as approved in writing by the Agency.
	Incremental Suspended Solids (mg/l)	**+50** (sample)	Daily	BM/TM/ENV/001 or as approved in writing by the Agency.
Note: see Improvement Requirement 24 for the remit of this table				

* A connecting drain (shown in Drawing W005) with a high point exists between the drains leading to emission points W5 and W9. This allows flow between the drains if either is accidentally blocked.

Note 1: Any reference to 'incremental' means the difference between that parameter measured in the effluent and the same parameter measured in the incoming River Weaver water on the same day.

Note 2: Any reference to 'monthly average' means the average of the monitoring or calculation results for each calendar month.

Note 3: Any reference to 'daily' means normal working days, excluding weekends and bank holidays. Monitoring frequency on an emission point shall be increased if abnormal process conditions are observed which indicate that the emissions from this point may approach the relevant limit. In this case, appropriate sampling and analysis shall be undertaken to demonstrate compliance with the relevant limit, or otherwise.

Any reference to '3 times per week' means there shall be a period of at least 24 hours between consecutive samples.

Note 4: Compliance shall be achieved if one sample out of the samples taken in a rolling 7-day period exceeds the sample limit by not more than 25% of the limit for incremental suspended solids and suspended solids.

Compliance shall be achieved if one sample out of the samples taken in a rolling 7-day period exceeds the sample limit by not more than 0.5 of a pH unit for pH and by not more than 5°C for temperature or incremental temperature.

If samples are taken in addition to those required in Table 2.2.5b above to assist with investigations, then these shall not be taken into account when reporting on compliance. This does not preclude any requirements for Notifications under Part 5 of this Permit

2.2.2.6 From the 22nd December 2008, no emission or combination of emissions to water from the Installation shall cause a failure of the designated stretches of the River Weaver downstream of the Installation to comply with the Surface Waters (Fishlife) (Classification) Regulations 1997.

Emissions to sewer

2.2.2.7 Emissions into sewer from the emission point(s) specified in Table 2.2.6 shall only arise from the source(s) specified in that Table.

Table 2.2.6 : Emission points into sewer

Emission point reference	Source	Sewer
S1 (on Attachment Q in Application EPR/SP3630BE/V004)	RSB Purge (expected discharge route)	United Utilities, Northwich Sewage Treatment Works

2.2.2.8 No limits for the emissions into sewer are deemed necessary.

2.2.3 Emissions to groundwater

2.2.3.1 No emission from the Permitted Installation shall give rise to the introduction into groundwater of any substance in List I (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).

2.2.3.2 No emission from within the Permitted Installation shall give rise to the introduction into groundwater of any substance in List II (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)) so as to cause pollution (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).

2.2.3.3 For substances other than those in List I or II (as defined in the Groundwater Regulations 1998 (SI 1998 No.2746)), the Operator shall use BAT to prevent or where that is not practicable to reduce emissions to groundwater from the Permitted Installation provided always that the techniques used by the Operator shall be no less effective than those described in the Application.

2.2.4 Fugitive emissions of substances to air

2.2.4.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce fugitive emissions of substances to air from the Permitted Installation in particular from:

- storage areas
- buildings
- pipes, valves and other transfer systems
- open surfaces

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.2.5 Fugitive emissions of substances to water and sewer

2.2.5.1 Subject to condition 2.2.5.2 below, the Operator shall use BAT so as to prevent or where that is not practicable to reduce fugitive emissions of substances to water (other than Groundwater) and sewer from the Permitted Installation in particular from:

- all structures under or over ground
- surfacing
- bunding
- storage areas

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.2.5.2 There shall be no release to water that would cause a breach of an EQS established by the UK Government to implement the Dangerous Substances Directive 76/464/EEC.

2.2.6 Odour

2.2.6.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce odorous emissions from the Permitted Installation, in particular by:

- limiting the use of odorous materials
- restricting odorous activities
- controlling the storage conditions of odorous materials
- controlling processing parameters to minimise the generation of odour
- optimising the performance of abatement systems
- timely monitoring, inspection and maintenance
- employing, where appropriate, an approved odour management plan

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.2.6.2 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.

2.2.7 Emissions to Land

2.2.7.1 This Part 2.2.7 of this Permit shall not apply to emissions to groundwater.

2.2.7.2 No emission from the Permitted Installation shall be made to land.

2.2.7.3 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.

2.3 Management

2.3.1 A copy of this Permit and those parts of the application referred to in this Permit shall be available, at all times, for reference by all staff carrying out work subject to the requirements of the Permit.

Training

2.3.2 The Permitted Installation shall be supervised by staff who are suitably trained and fully conversant with the requirements of this Permit.

2.3.3 All staff shall be fully conversant with those aspects of the Permit conditions which are relevant to their duties and shall be provided with adequate professional technical development and training and written operating instructions to enable them to carry out their duties.

2.3.4 The Operator shall maintain a record of the skills and training requirements for all staff whose tasks in relation to the Permitted Installation may have an impact on the environment and shall keep records of all relevant training.

Maintenance

2.3.5 All plant and equipment used in operating the Permitted Installation, the failure of which could lead to an adverse impact on the environment, shall be maintained in good operating condition.

2.3.6 The Operator shall maintain a record of relevant plant and equipment covered by condition 2.3.5 and for such plant and equipment:

2.3.6.1 a written or electronic maintenance programme; and

2.3.6.2 records of its maintenance.

Incidents and Complaints

2.3.7 The Operator shall maintain and implement written procedures for:

2.3.7.1 taking prompt remedial action, investigating and reporting actual or potential non-compliance with operating procedures or emission limits; and

2.3.7.2 investigating incidents, (including any malfunction, breakdown or failure of plant, equipment or techniques, down time, any short term and long term remedial measures and near misses) and prompt implementation of appropriate actions; and

2.3.7.3 ensuring that detailed records are made of all such actions and investigations.

2.3.8 The Operator shall record and investigate complaints concerning the Permitted Installation's effects or alleged effects on the environment. The record shall give the date and nature of complaint, time of complaint, name of complainant (if given), a summary of any investigation and the results of such investigation and any actions taken.

2.4 Efficient use of raw materials

2.4.1 The Operator shall -

2.4.1.1 maintain the raw materials table or description submitted in response to Section 2.4 of the Application and in particular consider on a periodic basis whether there are suitable alternative materials to reduce environmental impact;

2.4.1.2 carry out periodic waste minimisation audits and water use efficiency audits. If such an audit has not been carried out in the 2 years prior to the issue of this Permit, then the first such audit shall take place within 2 years of its issue. The methodology used and an action plan for increasing the efficiency of the use of raw materials or water shall be submitted to the Agency within 2 months of completion of each such audit and a review of the audit and a description of progress made against the action plan shall be submitted to the Agency at least every 4 years thereafter; and

2.4.1.3 ensure that incoming water use is directly measured and recorded.

2.5 Waste Storage and Handling

2.5.1 The Operator shall design, maintain and operate all facilities for the storage and handling of waste on the Permitted installation such that there are no releases to water or land during normal operation and that emissions to air and the risk of accidental release to water or land are minimised.

2.6 Waste recovery or disposal

2.6.1 Waste produced at the Permitted Installation shall be:

2.6.1.1 recovered to no lesser extent than described in the Application; and

2.6.1.2 where not recovered, disposed of while avoiding or reducing any impacts on the environment provided always that this is not done in any way that would have a greater effect on the environment than that described in the Application.

2.6.2 The Operator shall maintain the waste recovery or disposal table or description submitted in response to Section 2.6 of the Application and in particular review the available options for waste recovery and disposal for the purposes of complying with condition 2.6.1 above.

2.6.3 The Operator shall maintain and implement a system which ensures that a record is made of the quantity, composition, origin, destination (including whether this is a recovery or disposal operation) and where relevant removal date of any waste that is produced at the Permitted Installation.

2.7 Energy Efficiency

2.7.1 The Operator shall produce a report on the energy consumed at the Permitted Installation over the previous calendar year, by 31 January each year, providing the information required by condition 4.1.2.

2.7.2 The Operator shall maintain and update annually an energy management system which shall include, in particular, the monitoring of energy flows and targeting of areas for improving energy efficiency.

2.7.3 The Operator shall design, maintain and operate the Permitted Installation so as to secure energy efficiency, taking into account relevant guidance including the Agency's Energy Efficiency Horizontal Guidance Note as from time to time amended. Energy efficiency shall be secured in particular by:

- ensuring that the appropriate operating and maintenance systems are in place;
- ensuring that all plant is adequately insulated to minimise energy loss or gain;
- ensuring that all appropriate containment methods, (e.g. seals and self-closing doors) are employed and maintained to minimise energy loss;
- employing appropriate basic controls, such as simple sensors and timers, to avoid unnecessary discharge of heated water or air;
- where building services constitute more than 5% of the total energy consumption of the installation, identifying and employing the appropriate energy efficiency techniques for building services, having regard in particular to the Building services part of the Agency's Energy Efficiency Horizontal Guidance Note H2; and

maintaining and implementing an energy efficiency plan which identifies energy saving techniques that are applicable to the activities and their associated environmental benefit and prioritises them, having regard to the appraisal method in the Agency's Energy Efficiency Horizontal Guidance Note H2.

2.8 Accident prevention and control

2.8.1 The Operator shall maintain and implement when necessary the accident management plan submitted or described in response to Improvement Requirement Item 9 of this permit, provided it is accepted in writing by the Agency. The plan shall be reviewed at least every 2 years or as soon as practicable after an accident, whichever is the earlier, and the Agency notified of the results of the review within 2 months of its completion.

2.9 Noise and Vibration

2.9.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce emissions of noise and vibration from the Permitted Installation, in particular by:

- equipment maintenance, eg. of fans, pumps, motors, conveyors and mobile plant;
- use and maintenance of appropriate attenuation, eg. silencers, barriers, enclosures;
- timing and location of noisy activities and vehicle movements;
- periodic checking of noise emissions, either qualitatively or quantitatively; and
- maintenance of building fabric,

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.9.2 Emergency generators/ alarms/ sirens/ relief valves shall only be tested between the hours of 09:00 and 17:00 Monday to Friday and not on any Public Holiday.

2.9.3 The operator shall give at least 2 working days prior notice of any planned testing or operation of any plant items described in condition 2.9.2 or any others which are likely to cause annoyance. If an emergency situation results in the operation of such equipment and is likely to cause annoyance, the operator shall inform the Agency **without delay** of the reasons for the emergency and the expected duration.

2.10 On-site Monitoring

2.10.1 The Operator shall maintain and implement an emissions monitoring programme which ensures that emissions are monitored from the specified points, for the parameters listed in and to the frequencies and methods described in Tables 2.2.2a or 2.2.2b and 2.2.5a or 2.2.5b unless otherwise agreed in writing, and that the results of such monitoring are assessed. The programme shall ensure that monitoring is carried out under an appropriate range of operating conditions.

2.10.2 No condition applies

2.10.3 No condition applies

2.10.4 No condition applies

2.10.5 The Operator shall notify the Agency at least 14 days in advance of undertaking monitoring and/ or spot sampling, where such notification has been requested in writing by the Agency.

2.10.6 The Operator shall maintain records of all monitoring taken or carried out (this includes 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.

2.10.7 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme in condition 2.10.1 of this Permit and the environmental or other monitoring specified in condition 2.10.2 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing. This condition shall only apply following implementation of actions agreed by the Agency in response to the report provided by the operator to comply with Improvement Requirement Item 18.

2.10.8 There shall be provided:

2.10.8.1 safe and permanent means of access to enable sampling/monitoring to be carried out in relation to the emission points specified in Schedule 2 to this Permit, unless otherwise specified in that Schedule; and

2.10.8.2 safe means of access to other sampling/monitoring points when required by the Agency.

2.10.9 The Operator shall carry out the on-going monitoring identified in the Site Protection and Monitoring Programme submitted under condition 4.1.7, unless otherwise agreed in writing by the Agency.

2.10.10 The Operator shall, within 9 months of the issue of this Permit, in accordance with and using the format given in the Land Protection Guidance:

2.10.10.1 collect the site reference data identified in the Site Protection and Monitoring Programme submitted under condition 4.1.7, and

2.10.10.2 report that site reference data to the Agency,

- unless otherwise agreed in writing by the Agency.

2.11 Closure and Decommissioning

2.11.1 The Operator shall maintain and operate the Permitted Installation so as to prevent or minimise any pollution risk, including the generation of waste, on closure and decommissioning in particular by:-

2.11.1.1 attention to the design of new plant or equipment;

2.11.1.2 the maintenance of a record of any events which have, or might have, impacted on the condition of the site along with any further investigation or remediation work carried out; and

2.11.1.3 the maintenance of a site closure plan to demonstrate that the installation can be decommissioned avoiding any pollution risk and returning the site of operation to a satisfactory state.

2.11.2 Notwithstanding condition 2.11.1 of this Permit, the Operator shall carry out a full review of the Site Closure Plan at least every 4 years.

2.11.3 The site closure plan shall be implemented on final cessation or decommissioning of the Permitted activities or part thereof.

2.11.4 The Operator shall give at least 30 days written notice to the Agency before implementing the site closure plan.

2.12 Multiple Operator installations

2.12.1 The operator shall provide all reasonable information as requested by any other operator within the Installation, in order to enable compliance with conditions within any other Permit within the Installation.

2.12.2 Where the operator notifies the Environment Agency under condition 5.1.1 (a) or 5.1.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

2.13 Transfer to effluent treatment plant

2.13.1 No transfers to effluent treatment plant are controlled under this part of this Permit.

3 Records

3.1 The Operator shall ensure that all records required to be made by this Permit and any other records made by it in relation to the operation of the Permitted Installation shall:-

3.1.1 be made available for inspection by the Agency at any reasonable time;

3.1.2 be supplied to the Agency on demand and without charge;

3.1.3 be legible;

3.1.4 be made as soon as reasonably practicable;

3.1.5 indicate any amendments which have been made and shall include the original record wherever possible;

3.1.6 be retained at the Permitted Installation, or other location agreed by the Agency in writing, for a minimum period of 6 years from the date when the records were made, unless otherwise agreed in writing; and

3.1.7 where they concern the condition of the site of the Installation or are related to the implementation of the Site Protection and Monitoring Programme, be kept at the Permitted Installation, or other location agreed by the Agency in writing, until all parts of the Permit have been surrendered.

4 Reporting

4.1.1 All reports and written and or oral notifications required by this Permit shall be made or sent to the Agency using the contact details notified in writing to the Operator by the Agency.

4.1.2 The Operator shall, unless otherwise agreed in writing, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:-

4.1.2.1 in respect of the parameters and emission points specified in Table S2a or Table S2b to Schedule 2;

4.1.2.2 for the reporting periods specified in Table S2a or Table S2b to Schedule 2 and using the forms specified in Table S3 to Schedule 3;

4.1.2.3 giving the information from such results and assessments as may be required by the forms specified in those Tables; and

4.1.2.4 to the Agency within 28 days of the end of the reporting period.

4.1.3 The Operator shall submit to the Agency a report on the performance of the Permitted Installation over the previous year, by 31 January each year, providing the information listed in Tables S4.1 and S4.2a or Table S4.2b of Schedule 4, assessed at any frequency specified therein, and using the form specified in Table S3 to Schedule 3.

4.1.4 The Operator shall review fugitive emissions, having regard to the application of Best Available Techniques, on an annual basis, or such other period as shall be agreed in writing by the Agency, and a summary report on this review shall be sent to the Agency detailing such releases and the measures taken to reduce them within 3 months of the end of such period.

4.1.5 Where the Operator has a formal environmental management system applying to the Permitted Installation which encompasses annual improvement targets the Operator shall, not later than 31 January in each year, provide a summary report of the previous year's progress against such targets.

4.1.6 The Operator shall, within 6 months of receipt of written notice from the Agency, submit to the Agency a report assessing whether all appropriate preventive measures continue to be taken against pollution, in particular through the application of the best available techniques, at the installation. The report shall consider any relevant published technical guidance current at the time of the notice which is either supplied with or referred to in the notice, and shall assess the costs and benefits of applying techniques described in that guidance, or otherwise identified by the Operator, that may provide environmental improvement.

4.1.7 The Operator shall, within five months of the date of this permit, submit a detailed Site Protection and Monitoring Programme, in accordance with and using the appropriate template format given in the Land Protection Guidance. This shall cover the aspects referred to in Improvement Requirement 1 of this Permit. The Operator shall implement and maintain the Site Protection and Monitoring Programme (SPMP) submitted under condition 4.1.7, and shall carry out regular reviews of it at a minimum frequency of every 2 years. The results of such reviews and any changes made to the SPMP shall be reported to the Agency within 1 month of the review or change.

4.1.8 The Operator shall provide a summary report to the Agency on progress towards completion of all Improvement Requirements in Table 1.4.1 every 3 months. Reporting shall continue until the techniques or actions proposed in all Improvement Requirements, which have been agreed in writing by the Agency, have been implemented.

5 Notifications

5.1.1 (a) 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, 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) in the event 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) 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, 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.

5.1.2 Any information provided under condition 5.1.1 (a)(i), or 5.1.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 1 to this permit within the time period specified in that schedule.

5.1.3 The Operator shall give written notification as soon as practicable prior to any of the following:-

5.1.3.1 permanent cessation of the operation of part or all of the Permitted Installation;

5.1.3.2 cessation of operation of part or all of the Permitted Installation for a period likely to exceed 1 year; and

5.1.3.3 resumption of the operation of part or all of the Permitted Installation after a cessation notified under condition 5.1.3.2.

5.1.4 The Operator shall notify the Agency, as soon as reasonably practicable, of any information concerning the state of the Site which adds to that provided to the Agency as part of the Application or to that in the Site Protection and Monitoring Programme submitted under condition 4.1.7 of this Permit.

5.1.5 The Operator shall notify the following matters to the Agency in writing within 14 days of their occurrence: -

5.1.5.1 where the Operator is a registered company:-

- any change in the Operator's trading name, registered name or registered office address;
- any change to particulars of the Operator's ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary)
- any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement or being wound up;

5.1.5.2 where the Operator is a corporate body other than a registered company:

- any change in the Operator's name or address;
- any steps taken with a view to the dissolution of the Operator.

5.1.5.3 In any other case: -

- the death of any of the named Operators (where the Operator consists of more than one named individual);
- any change in the Operator's name(s) or address(es);
- 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 them being in a partnership, dissolving the partnership;

5.1.6 Where the Operator has entered into a Climate Change Agreement with the Government, the Operator shall notify the Agency within one month of: -

5.1.6.1 a decision by the Secretary of State not to re-certify that Agreement.

5.1.6.2 a decision by either the Operator or the Secretary of State to terminate that agreement.

5.1.6.3 any subsequent decision by the Secretary of State to re-certify such an Agreement.

5.1.7 Where the Operator has entered into a Direct Participant Agreement in the Emissions Trading Scheme which covers emissions relating to the energy consumption of the activities, the Operator shall notify the Agency within one month of:-

5.1.7.1 a decision by the Operator to withdraw from or the Secretary of State to terminate that agreement.

5.1.7.2 a failure to comply with an annual target under that Agreement at the end of the trading compliance period.

6 Interpretation

6.1.1 In this Permit, the following expressions shall have the following meanings: -

"Application" means the application for this Permit, together with any response to a notice served under Schedule 4 to the PPC Regulations and any operational change agreed under the conditions of this Permit.

"background concentration" means such concentration of that substance as is present in:

- water supplied to the site; or
- where more than 50% of the water used at the site is directly abstracted from ground or surface water on site, the abstracted water; or
- where the Permitted Installation uses no significant amount of supplied or abstracted water, the precipitation on to the site.

"BAT" means best available techniques means the most effective and advanced stage of development of activities and their methods of operation which indicates the practical suitability of particular techniques to prevent and where that is not practicable to reduce emissions and the impact on the environment as a whole. For these purposes: "available techniques" means "those techniques which have been developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the operator"; "best" means "in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole" and "techniques" "includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned." . In addition, Schedule 2 of the PPC Regulations has effect in relation to the determination of BAT.

"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.

"Fugitive emission" means an emission to air or water (including sewer) from the Permitted Installation which is not controlled by an emission or background concentration limit under conditions 2.2.1.3, 2.2.2.4 or 2.2.2.5 of this Permit.

"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*

"$L_{Aeq,\ T}$*"* means the equivalent continuous A-weighted sound pressure level in dB determined over time period, T.

"$L_{A90,\ T}$*"* means the A-weighted sound pressure level in dB exceeded for 90% of the time period, T.

"L_{AFmax}*"* means the maximum A weighted sound level measurement in dB measured with a fast time weighting.

"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.

"Permitted Installation" means the activities and the limits to those activities described in Table 1.1.1 of this Permit.

"Sewer" means sewer within the meaning of section 219(1) of the Water Industry Act 1991.

"Staff" includes employees, directors or other officers of the Operator, and any other person under the Operator's direct or indirect control, including contractors.

"Year" means calendar year ending 31 December.

6.1.2 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.

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

6.1.3.1 in relation to gases 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

6.1.3.2 in relation to gases 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

6.1.4 Where any condition of this Permit refers to the whole or parts of different documents, in the event of any conflict between the wording of such documents, the wording of the document(s) with the most recent date shall prevail to the extent of such conflict.

Schedule 1 - Notification of abnormal emissions

This page outlines the information that the Operator must provide to satisfy conditions 5.1.1 and 5.1.2 of this Permit.

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 2 - Reporting of monitoring data

Parameters, for which reports shall be made, in accordance with conditions 4.1.2 and 4.1.3 of this Permit, are listed below.

Table S2a: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins
Total Particulate Matter mg/m^3	A1	Every 6 months	Date to be agreed in writing by the Agency
Particulate matter (<10 microns) mg/m^3	A1	Every 6 months	Date to be agreed in writing by the Agency
Carbon Monoxide mg/m^3	A1, A3, A7	Every 6 months	Date to be agreed in writing by the Agency
Oxides of nitrogen (As NO_2) mg/m^3	A1	Every 6 months	Date to be agreed in writing by the Agency
Sulphur dioxide $mg\ m^{-3}$	A1	Every 6 months	Date to be agreed in writing by the Agency
Ammonia mg/m^3	A3, A4, A5	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Hydrogen Sulphide mg/m^3	A3	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Particulate Matter mg/m^3	A8, A9, A11	Annually	Date to be agreed in writing by the Agency
Flowrate (m3/day)	W4, W5, W6, W9, W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Incremental Temperature (°C)	W4, W5, W6	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Absolute Temperature(°C)	W9, W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
pH	W4, W5, W6, W9, W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Incremental Suspended Solids (mg/l)	W4, W5, W6, W9	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Suspended Solids (mg/l)	W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Incremental Total Ammonia (as N) (mg/l)	W5, W6, W9	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Total Ammonia (as N) (mg/l)	W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Phenol (mg/l)	W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Total Cresols (mg/l)	W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Total Cyanide (mg/l)	W11, W12	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Times of Diversions of W12 to W11	-	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Number of 24-hour sampling periods when the inlet brine temperature is greater than 27° C for more than 12 hours	-	Every 6 months	10/02/07-30/06/07, then 01/07/07.

Number of 24-hour sampling periods when the inlet brine temperature is greater than 27° C and the 24- hour plant rate is less than 1100 tonne.	-	Every 6 months	10/02/07-30/06/07, then 01/07/07.
Note: see Improvement Requirement 24 for the remit of this table			

Table S2b: Reporting of monitoring data (upon operation of stand-alone sodium bicarbonate plant only)

Parameter	Emission point	Reporting period	Period begins
Particulate Matter mg/m^3	A9	Annually	Date to be agreed in writing by the Agency
Flowrate (m3/day)	W4, W5, W6, W9	Every 6 months	01/07/07
Incremental Temperature (°C)	W4, W5, W6, W9	Every 6 months	01/07/07
Absolute Temperature(°C)	W11	Every 6 months	01/07/07
pH	W4, W5, W6, W9, W11	Every 6 months	01/07/07
Incremental Suspended Solids (mg/l)	W4, W5, W6, W9, W11	Every 6 months	01/07/07
Times of Diversions of W5 to W9 or W9 to W5	-	Every 6 months	01/07/14
Times of Diversions of CHP effluent to W11	-	Every 6 months	01/07/14
Note: see Improvement Requirement 24 for the remit of this table			

Schedule 3 - Forms to be used

Table S3: Reporting Forms	
Media / parameter	**Form Number**
Air	A1
Water (excluding sewer)	W1
Waste Return	R1
Performance indicators	P1

Schedule 4 - Reporting of performance data

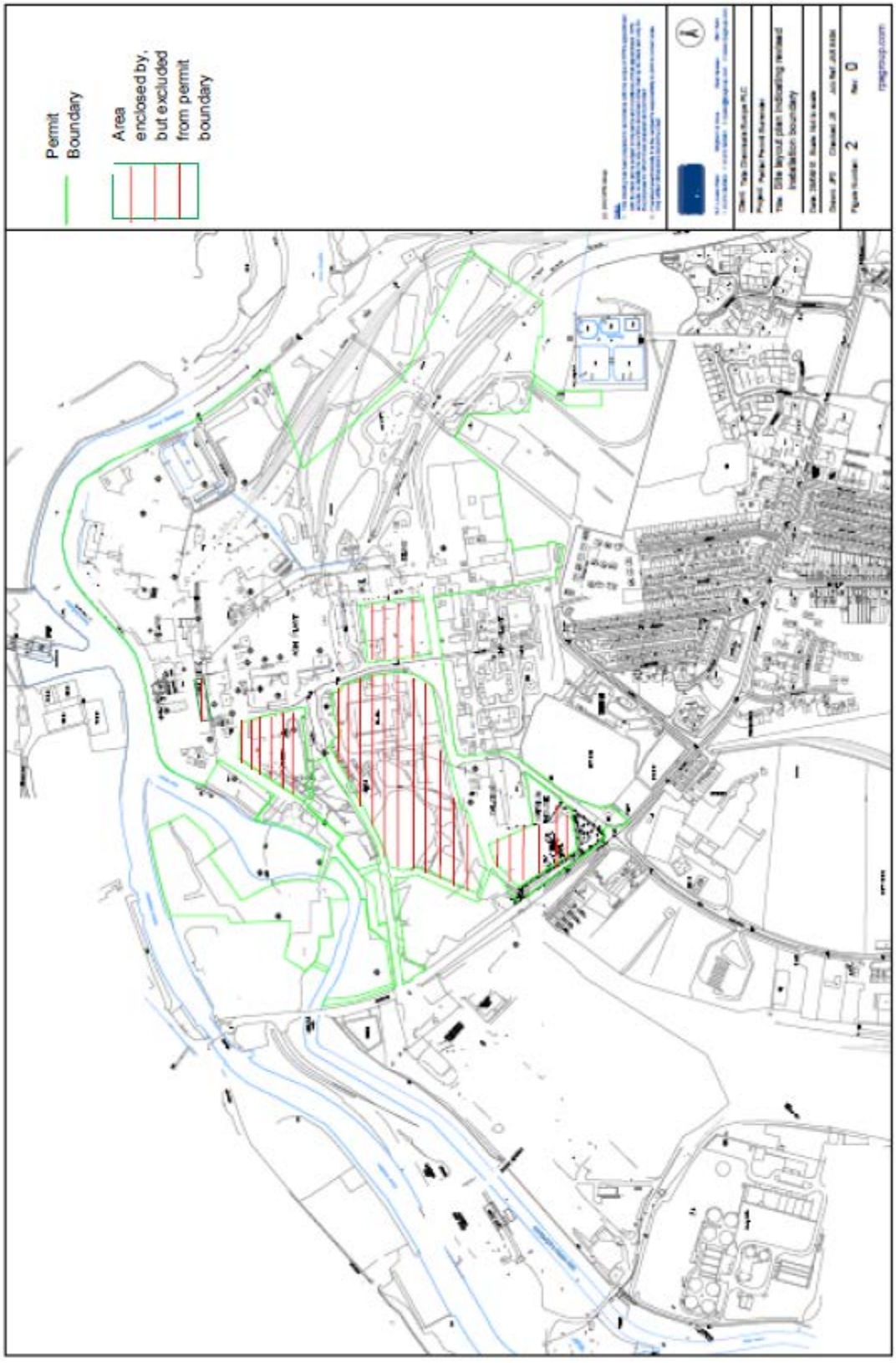
Data required to be recorded and reported by Condition 4.1.3. The data should be assessed at the frequency given and reported annually to the Agency.

Table S4.1: Annual Production	
None required.	

Table S4.2a: Performance parameters		
Parameter	**Frequency of assessment**	**Performance indicator**
Specific Usage of Raw Materials – Brine, Coke, Anthracite, Limestone, Ammonia	Quarterly	(tonne/quarter)
Specific Emissions – Ammonia to Air (Release Points and Fugitive), Ammonia to Water, Carbon Dioxide to Air, Suspended Solids to Water, Process Waste to Landfill (Handling)	Quarterly	(tonne/quarter)
Specific Total Energy Usage	Quarterly	(GJ/quarter)
Specific Energy Emissions – total to water	Quarterly	(GJ/quarter)
Specific Water Usage – River Water, Process Water	Quarterly	(m^3/quarter)
Specific Water Emissions	Quarterly	(m^3/quarter)
Total Ammonia to Air – from Release Points and Fugitive	Annual	(tonne/year)
Total Ammonia to water	Annual	(tonne/year)
Total Heat Load to water	Annual	(GJ/year)
Total Suspended Solids to water	Annual	(tonne/year)
Total Phenol to water	Annual	(tonne/year)
Total Cresols to water	Annual	((tonne/year)
Total Cyanide to water	Annual	(tonne/year)
Note: see Improvement Requirement 24 for the remit of this table		

Table S4.2b: Performance parameters (upon operation of stand-alone sodium bicarbonate plant only)		
Parameter	**Frequency of assessment**	**Performance indicator**
Specific Usage of Raw Materials – sodium carbonate, carbon dioxide, nitrogen	Annual	(tonne/year)
Specific Emissions –Suspended Solids to Water, Process Waste to Landfill (Handling)	Annual	(tonne/year)
Specific Total Energy Usage	Annual	(GJ/year)
Specific Energy Emissions – total to water	Annual	(GJ/year)
Specific Water Usage – River Water, Process Water	Annual	(m^3/year)
Specific Water Emissions	Annual	(m^3/year)
Total Heat Load to water	Annual	(GJ/year)
Total Suspended Solids to water	Annual	(tonne/year)
Note: see Improvement Requirement 24 for the remit of this table		

Schedule 5 - Site Plan



END OF PERMIT