Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Synthomer (UK) Limited

Harlow Polymer Site
Central Road
Templefields
Harlow
Essex
CM20 2BH

Variation application number

EPR/ZP3532SW/V004

Permit number

EPR/ZP3532SW

Harlow Polymer Site
Permit number EPR/ZP3532SW

Introductory note

This introductory note does not form a part of the notice

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made.

About the site:

Harlow Polymer Site, operated by Synthomer Limited, is located in the town of Harlow, Essex. It covers an area of approximately 21,000m2. It is surrounded by commercial/industrial properties. Beyond the commercial properties to the south, at about 300m distance, are a school and residential properties.

Harlow District Council have designated Harlow Marsh (approx. 600 m to the west of the site) as a Local Nature Reserve. Harlow District Council and East Hertfordshire District Council have designated Areas of Unadopted Green Belt approx. 320m and 440m north-west of the site. The installation is approx. 7.3 km from the Lee Valley European sites, which are SPAs and a Ramsar. An assessment showed that all emissions were insignificant and concluded that the installation will have no adverse effect, either alone or in combination upon the interest features of the European sites. English Nature were consulted and agreed the Agency's conclusions.

Harlow District Council have designated Harlow Marsh (approx. 600 m to the west of the site) as a Local Nature Reserve. Harlow District Council and East Hertfordshire District Council have designated Areas of unadopted Green Belt approx. 320m and 440m north-west of the site. The installation is approx. 7.3 km from the Lee Valley European sites, which are SPAs and a Ramsar.

The nearest surface water feature is the River Stort Navigation, approx. 500m north of the site. Surface water from the site is released to this river. The site is located on a minor aquifer and the soil is classified as having a high leaching potential. It is not within a groundwater source protection zone.

The site was greenfield until the late 1940s. At that time the site and the surrounding area was developed for industrial use. The Alcotex facility has existed since the late 1950s. Various parts of the specialities plant have been in existence since 1980 with additions in 1995.

The site produces polymers, principally polyvinyl acetate and polyvinyl alcohol. Several different processes are used. These are the Alcotex, PMK12, PMK13, LHA and the tower process.

The site contains two existing medium combustion plant that run on natural gas. The two boilers are 7MWth each.

The permit has been reviewed against the requirements of the Medium Combustion Plant Directive (MCPD) for 2025 and relevant conditions and monitoring requirements have been added.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application received ZP3532SW (EPR/ZP3532SW/A001)	Duly made 27/03/06	
Additional information received	19/07/06	Amended site plan.
Additional information received	21/07/06	Supplement to ASR
Additional information received	25/08/06	Revised air emission data
Additional information received	01/09/06	revised air emission points, and revised list of raw materials handled
Permit determined EAWML 12345	16/11/06	Permit issued to Synthomer (UK) Limited
Application EPR/ZP3532SW/V002 (variation)	Duly made 07/11/13	Normal variation to add cryogenic condenser.
Variation determined EPR/ZP3532SW/V002	18/11/13	Varied permit issued.
EPR/ZP3532SW/V003 (variation and consolidation) (Billing Ref EP3006SE)	Issued 23/10/2020	Agency initiated variation to remove confidential information and consolidate the two permits
Application EPR/ZP3532SW/V004 (variation and consolidation)	Regulation 61 Notice response received 06/08/2024	Environment Agency initiated variation and consolidation following Medium Combustion Plant permit reviewed.
Variation determined and consolidation issued EPR/ZP3532SW	18/10/2024	Varied and consolidated permit issued.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit number

EPR/ZP3532SW

Issued to

Synthomer (UK) Limited (“the operator”)

whose registered office is

Temple Fields
Central Road
Harlow
Essex
CM20 2BH

company registration number 872262

to operate a regulated facility at

Harlow Polymer Site
Central Road
Templefields
Harlow
Essex
CM20 2BH

to the extent set out in the schedules.

The notice shall take effect from 18/10/2024

Name	Date
Beccy Brough	**18/10/2024**

Authorised on behalf of the Environment Agency

Schedule 1

The following conditions were added as a result of the permit review against the requirements of the Medium Combustion Plant Directive for 2025:

- 2.3.6 (a) and (b)
- 3.5.5
- 3.5.6
- 4.1.3

The following conditions were amended as a result of the permit review against the requirements of the Medium Combustion Plant Directive for 2025:

- Table S3.1, as referenced by conditions 3.1.1, 3.1.3, 3.5.1 (a) and 3.5.4, is amended to include appropriate emission limits and monitoring requirements.
- Table S4.1, as referenced by condition 4.2.3 (a) and (b), is amended to include an emission to air parameter.
- Table S4.4, as referenced by conditions 4.2.2 (c) and 4.2.3 (b), is amended to refer to the current emissions to air reporting form.
- Schedule 6, as reference by condition 4.4.1, is amended to include additional relevant definitions.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/ZP3532SW

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/ZP3532SW/V004 authorising,

Synthomer (UK) Limited ("the operator"),

whose registered office is

Temple Fields
Central Road
Harlow
Essex
CM20 2BH

company registration number 872262

to operate an installation at

Harlow Polymer Site
Central Road
Templefields
Harlow
Essex
CM20 2BH

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

Name	Date
Beccy Brough	**18/10/2024**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

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

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

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

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

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

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan , and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

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

2.3.6 For the following activity referenced in Schedule 1 Table S1.1 (AR2):

(a) The operator must keep periods of start-up and shut down of the combustion plant as short as possible.

(b) There shall be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.

2.4 Improvement programme

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

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

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

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

3.1.3 Total annual emissions from the emission points set out in schedule 3 tables S3.1, S3.2 and S3.3 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.

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

3.2 Emissions of substances not controlled by emission limits

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

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

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

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

3.3 Odour

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

3.3.2 The operator shall:

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

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

3.4 Noise and vibration

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

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

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

3.5 Monitoring

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

(a) point source emissions specified in tables S3.1, S3.2 and S3.3;

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

3.5.5 For the following activity referenced in Schedule 1, Table S1.1 (AR2):

(a) For existing MCP Monitoring measurements shall be carried out within four months of the issue date of this notice.

3.5.6 Monitoring of MCP shall not take place during periods of start-up or shut down.

4 Information

4.1 Records

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

(a) be legible;

(b) be made as soon as reasonably practicable;

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

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

(i) off-site environmental effects; and

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

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

4.1.3 The operator shall maintain a record of the type and quantity of fuel used and the total annual operating hours for each MCP.

4.2 Reporting

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

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

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

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

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

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

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

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

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

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

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(a) the death of any of the named operators (where the operator consists of more than one named individual);

(b) any change in the operator's name(s) or address(es); and

(c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

(a) a decision by the Secretary of State not to re-certify the agreement;

(b) a decision by either the operator or the Secretary of State to terminate the agreement; and

(c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	Section 4.1 A(1)(a)(vi) Producing organic chemicals such as - organic compounds containing halogens Section 4.1 Part A(1)(a)(viii)	Producing polymers, principally polyvinyl acetate and polyvinyl alcohol	From receipt of raw materials to despatch of finished products and disposal of waste arising, and including the operation of abatement equipment.
	Directly Associated Activity		
AR2	Operation of site utilities	Boilers (2 x 7MWth, one operating 100% of the time, the other up to 30% of the time at 20% loading), burning natural gas which are existing MCP's. Water softening Refrigeration Cooling water by the operation of cooling towers Compressed air Nitrogen using a pressure swing adsorption plant, with liquid nitrogen as a back up The recovery of a blend of methyl acetate and methanol	Includes oil receipt and storage.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/ZP3732SW/A001	The response to Sections 2.1 and 2.2 of the Application, as described in pages 7 – 38 of the "Technical Report in support of the PPC Application for the Harlow Site"	27/03/06
Variation Application EPR/ZP3732SW/V002	Document : EPR/ZP3532SW/V002 Appendix 1 Proposal for VOC emission reduction and solvent recovery	07/11/13

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC 1	A written plan shall be submitted to the Agency for approval detailing the measures to be used to control the release of particulate from emission points A7 and A8. The plan shall provide for the following • the provision of abatement equipment that shall minimise the release of particulate • the production of written maintenance procedures for all equipment that may affect the release of particulate • monitoring of particulate during commissioning of the abatement equipment • the provision of an assessment (to H1 methodology or equivalent) of the environmental impact of particulate emissions • the provision of continuous monitoring or equivalent technical measures that shall be used to close down the process in the event of abatement malfunction • a timescale for the implementation of the above actions The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency.	completed
IC2	A written procedure shall be submitted to the Agency for approval detailing the measures to be used to establish and maintain the integrity of all sub-surface structures and containment, including but not limited to the drainage system. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency.	completed
IC3	A written plan shall be submitted to the Agency for approval detailing the provision of continuous monitoring or equivalent technical measures on all emission points where abatement is operated, to comply with the requirements of section 2.10.1 of TGN S 4.01. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	completed
IC4	A written plan shall be submitted to the Agency for approval detailing measures to comply with the requirements of section 2.2.5 of TGN S4.01, in particular: – improved containment for the off-loading point for boiler fuel oil in Zone A – a procedure for testing and inspection of the effluent drainage sump in the bulk storage area of the Specialities IBC chemicals in Zone B – a procedure for testing and inspection of effluent drains from the covered highly flammable drum store in Zone E – the upgrading of concrete to be resistant to HCl at all points where leakage or a spill of HCl is possible – the provision of a bund for the forklift refuelling area – a procedure for integrity testing of all bunds The plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC5	A written plan shall be submitted to the Agency for approval detailing consideration of techniques to improve waste water treatment. Improvements considered shall include techniques to reduce the concentration of chemical oxygen demand (COD) and bromide ion to water. Reduction of COD shall have regard to the benchmark levels quoted in TGN S4.01. The concentration of COD emitted to water shall be taken as the concentration of COD emitted to sewer after application of a sewage treatment factor appropriate to the Rye Meads STW. The plan shall contain a cost benefit analysis (using the methodology given in Guidance Note H1 or equivalent). All assumptions shall be stated and justified. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	completed
IC6	A written report shall be submitted to the Agency for approval proposing and justifying appropriate techniques to be used to calculate the annual emissions of methyl acetate and methanol required to be reported by Table S4.4 of the permit. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.	completed
IC7	A written site-closure plan shall be submitted to the Agency for approval to comply with the requirements of section 2.11 of TGN S 4.01. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.	completed
IC8	A written plan shall be submitted to the Agency for approval detailing improved measures to be taken to prevent contamination of surface water released directly to controlled waters. Measures considered shall include – the provision of continuous monitoring interlocked with operation of a penstock or similar – housekeeping measures – procedures for preventing spills – procedures for responding to spills – minimising the presence of potential contaminants in areas where surface water drains to W1 The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	completed

IC9	The operator shall carry out the following improvements to his containment, to meet the requirements of Section 2.2.5 of TGN S4.01:
	• making good the hardstanding wherever its integrity is compromised
	• installing impervious bunds around the following:
	  – the Covered Highly Flammable Store
	  – the raw material storage area for the cooling towers
	the IBC storage area north of the cooling towers
		completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC10	A written report shall be submitted to the Agency for approval detailing the results of a survey of VOC emissions to air. The survey shall meet the following criteria: • All monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation as appropriate • Measurements shall be made under all representative production conditions • Both the total VOC concentration and the concentration of separate species shall be measured • VOCs considered shall include at least the following – methyl acetate – methanol – acetaldehyde – acetic acid – brominated organic species • Measured emissions shall be compared against mass balance calculations The report shall use the results of the survey to propose and justify appropriate techniques to be used to calculate the annual emissions of methyl acetate and methanol required to be reported by Table S4.4 of the permit The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.	completed
IC11	A written report shall be submitted to the Agency for approval detailing the results of a study of opportunities for waste recovery before disposal, and evaluating the best environmental option for the disposal of the residual waste. The report shall comply with the requirements of Section 2.6 of TGN S4.01. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.	completed
IC12	A written plan shall be submitted to the Agency for approval detailing the techniques used to minimise water use, to comply with the requirements of section 2.4.3 of TGN S 4.01. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	completed
IC13	A written procedure shall be submitted to the agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency.	completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC14	A written report shall be submitted to the Agency for approval detailing the consideration of techniques to reduce emissions of volatile organic compounds to air to the benchmark levels quoted in TGN S4.01. The plan shall contain a cost benefit analysis (using the methodology given in Guidance Note H1 or equivalent). All assumptions shall be stated and justified. Where appropriate the report shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The report shall be implemented by the operator from the date of approval by the Agency.	completed
IC15	The Operator shall submit a report on emissions of methyl acetate and methanol from emission point A1. The report shall include a proposal for new annual emission limits for these substances to be agreed with the Environment Agency.	6 months from completion of commissioning of the new condenser
IC16	The Operator shall carry out a review of further measures to reduce emissions of volatile organic compounds from emission point A1 with a view to achieving the benchmark emission limit value as set out in sector guidance note EPR 4.01. The Operator shall submit a report on the review to the Environment Agency with any identified options and timescale to implement if appropriate.	12 months from completion of commissioning of the new condenser

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Sodium hydroxide	Shall contain a maximum of 0.01 ppm mercury.

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in Schedule 7]	Alcotex reactors and hydrolysis tanks, abated by a chilled water condenser and cryogenic condenser	No parameters set	-	-	-	-
A2 [Point A2 on site plan in schedule 7]	Exhaust from Alcotex rotary paddle dryers and Rosinaire 1-3 conveyor exhaust abated by scrubber, filter and chilled water condenser	No parameters set	-	-	-	-
A3 [Point A3 on site plan in schedule 7]	Exhaust from Alcotex rotary paddle dryers and Rosinaire 4 conveyor exhaust abated by scrubber, filter and chilled water condenser	No parameters set	-	-	-	-
A4 [Point A4 on site plan in schedule 2]	Alcotex reactors and hydrolysis tanks, abated by a chilled water condenser	No parameters set	-	-	-	-
A5 [Point A5 on site plan in schedule 2]	Boiler 1 operated on Natural Gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	200 mg/m^3 Limit applies from 01/01/2025	Periodic	Every 3 years	MCERTS BS EN 14792
		Carbon Monoxide	No Limit	Periodic	Every 3 years	MCERTS BS EN 15058
A6 [Point A6 on site plan in schedule 2]	Boiler 2 operated on Natural Gas	No parameters set	200 mg/m^3 Limit applies from 01/01/2025	Periodic	Every 3 years	MCERTS BS EN 14792
		Carbon Monoxide	No Limit	Periodic	Every 3 years	MCERTS BS EN 15058

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A7 [Point A7 on site plan in schedule 2]	Alcotex fluidised bed dryers abated by cyclone	No parameters set	-	-	-	Permanent sampling access not required
A8 [Point A8 on site plan in schedule 2]	Alcotex fluidised bed dryers abated by cyclone	No parameters set	-	-	-	Permanent sampling access not required
-	Vinyl acetate (VA) handling equipment	No parameters set	-	-	-	Permanent sampling - access not required
-	Quench and dump tank vents	No parameters set	-	-	-	Permanent sampling access not required
-	VA head tanks	No parameters set	-	-	-	Permanent sampling access not required
-	Salt treatment LEV	No parameters set	-	-	-	Permanent sampling access not required
-	Exhausts from Fluidised Bed Dryers (except A7 and A8)	No parameters set	-	-	-	Permanent sampling access not required
-	Solution room LEV	No parameters set	-	-	-	Permanent sampling access not required
-	Catalyst mixer charging hole	No parameters set	-	-	-	Permanent sampling access not required
-	Hydrolysis sampling	No parameters set	-	-	-	Permanent sampling access not required
-	K9 vent	No parameters set	-	-	-	Permanent sampling access not required
-	K10 vent	No parameters set	-	-	-	Permanent sampling access not required

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
-	LHA vents	No parameters set	-	-	-	Permanent sampling access not required
-	Vents from stills	No parameters set	-	-	-	Permanent sampling access not required
-	MAM sampling point	No parameters set	-	-	-	Permanent sampling access not required
=	Storage tank vents and tanker unload points	No parameters set	-	-	-	Permanent sampling access not required
-	Various pumps and flanges	No parameters set	-	-	-	Permanent sampling access not required
-	Distillate waste tank vent	No parameters set	-	-	-	Permanent sampling access not required
-	Reactor vacuum system	No parameters set	-	-	-	Permanent sampling access not required
-	Reactor inerting system vent	No parameters set	-	-	-	Permanent sampling access not required
-	Small additions vents	No parameters set	-	-	-	Permanent sampling access not required
-	Reactor inerting system vent	No parameters set	-	-	-	Permanent sampling access not required
-	Reactor vacuum system seal pot vent	No parameters set	-	-	-	Permanent sampling access not required
-	Reactor inerting system seal pot vent	No parameters set	-	-	-	Permanent sampling access not required

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
-	Citex unit exhaust	No parameters set	-	-	-	Permanent sampling access not required
-	Small additions vent	No parameters set	-	-	-	Permanent sampling access not required
-	Distillate receiver vent	No parameters set	-	-	-	Permanent sampling access not required
-	Specialities filling points	No parameters set	-	-	-	-
-	K9 and K10 overhead mixer	No parameters set	-	-	-	-
-	n-propanol holding tank	No parameters set	-	-	-	-
-	Butyraldehyde scrubber vent	No parameters set	-	-	-	-
-	Gas oil tank	No parameters set	-	-	-	-
-	Blenders 1 and 2 vents	No parameters set	-	-	-	-
-	Catalyst storage and mixing tanks	No parameters set	-	-	-	-
-	PVC plant knock-out pots	No parameters set	-	-	-	-
-	P2, P3, P8, P9 and P10 dump tanks	No parameters set	-	-	-	-
-	Pilot plant carbon scrubber vent	No parameters set	-	-	-	-
Monitoring requirements are defined at a temperature of 273.15 K, a pressure of 101.3 kPa and after correction for the water vapour content of the waste gases at a standardised O_2 content of 6% for solid fuels, 15% for engines and gas turbines and 3% for all other MCPs.						

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
W1 (Point W1 on site plan in schedule 2) - emission to River Stort	Uncontaminated surface water	No parameters set	-	-	-	-

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1 (Point S1on site plan in schedule 2) - emission to Rye Meads Sewage Treatment Works	Process effluent and rainwater run-off from process areas and pilot plant after settlement	No parameters set	-	-	-	-
S2 (Point S2 on site plan in schedule 2) - emission to Rye Meads Sewage Treatment Works	Process effluent from development pilot plant	No parameters set	-	-	-	-

Table S3.4 Annual limits		
Substance	Medium	Limit (including unit)
Methyl acetate	Air	310 tonnes, then as agreed in writing with the Environment Agency through IC15
Methanol	Air	70 tonnes, then as agreed in writing with the Environment Agency through IC15

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air (MCP) Parameters as required by conditions 3.5.1	A5 and A6	Every 3 years from date of acceptance of first monitoring measurements under condition 3.5.5	1 January

Table S4.2: Annual production/treatment	
Parameter	**Units**
Solid grades of polyvinyl acetate and polyvinyl alcohol	tonnes
Solution grades of polyvinyl acetate and polyvinyl alcohol	tonnes
Total production of all grades of polyvinyl acetate and polyvinyl alcohol	tonnes
Recovery of a blend of methyl acetate/methanol	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Water usage	Annually	tonnes
Energy usage	Annually	MWh electricity
Energy usage	Annually	MWh natural gas
Energy usage	Annually	MWh gas oil
Specific energy usage	Annually	MWh (all sources)/tonne total production
Water usage	Annually	m^3
Total methanol used per tonne of product	Annually	tonnes
Total vinyl acetate monomer used per tonne product	Annually	tonnes
COD release to sewer per tonne product	Annually	COD kg/ tonne total production
Methanol release to air per tonne product	Annually	Methanol kg/ tonne total production
Methyl acetate release to air per tonne product	Annually	Methyl acetate kg/ tonne total production

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Emissions to Air Reporting Form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Water and Land	Form water 1 or other form as agreed in writing by the Environment Agency	16/11/2006
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	16/11/2006
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	16/11/2006
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	16/11/2006
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	16/11/2006

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

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

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

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

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

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

"authorised officer" means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

"Compliance date" means 01/01/2025 for existing MCPs with a net thermal input of greater than 5MWth or 01/01/2030 for existing MCP's with a net rated thermal input of less than or equal to 5MWth.

"emissions to land" includes emissions to groundwater.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"emissions of substances not controlled by emission limits" means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

"existing medium combustion plant" means an MCP in operation before 20 December 2018.

"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.

"Hazardous property" has the meaning in Annex lll of the Waste Framework Directive.

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

"Medium combustion plant" or "MCP" means a combustion plant with a net rated thermal input equal to or greater than 1MW but less than 50MW.

"Medium Combustion Plant Directive" or "MCPD" means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

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

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

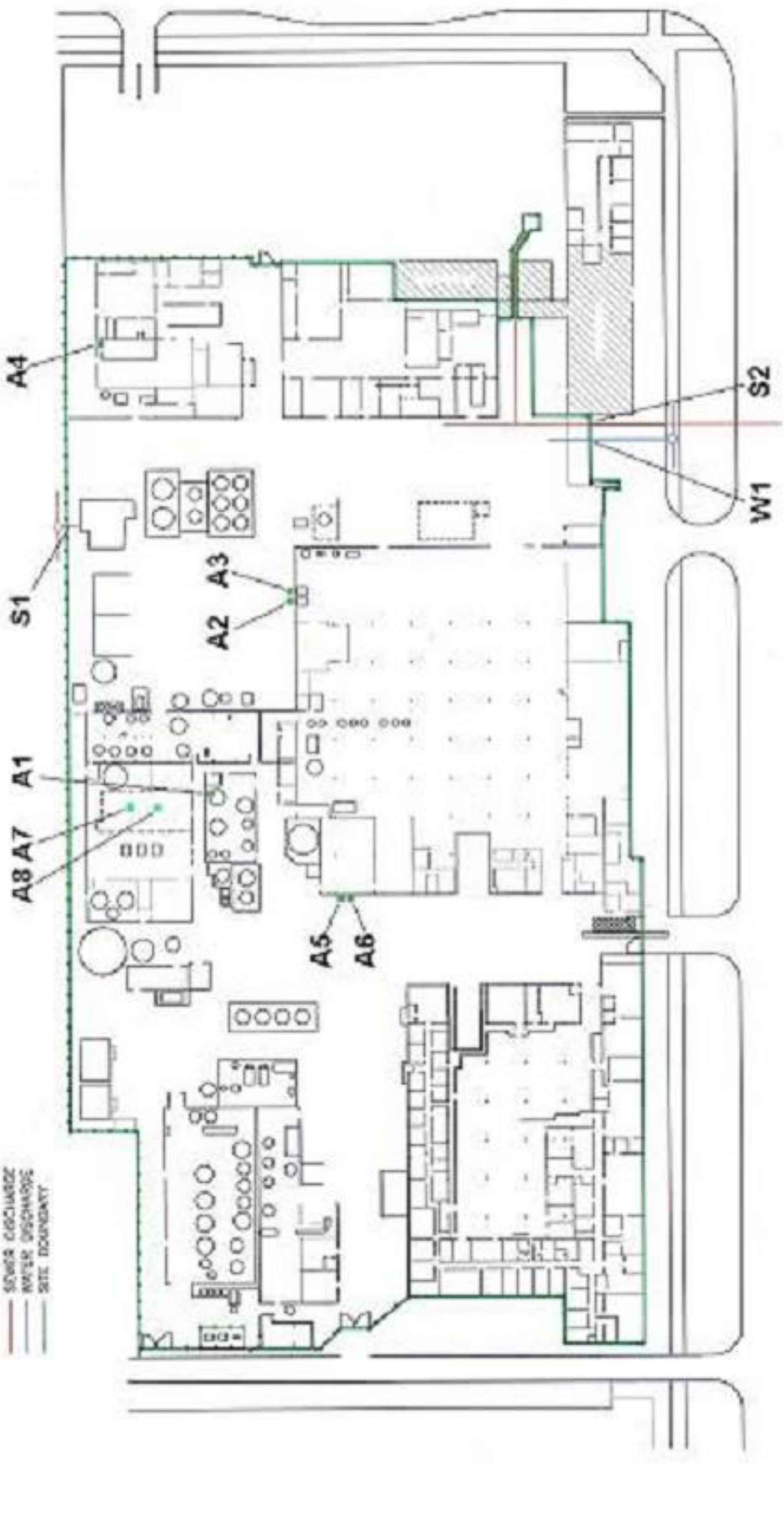
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

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

"operating hours" means the time, expressed in hours, during which a combustion is operating and discharging emissions into the air, excluding start-up and shut-down periods.

"year" means calendar year ending 31 December.

Schedule 7 – Site plan



END OF PERMIT