5

ENVIRONMENT AGENCY

Permit with introductory note

Pollution Prevention and Control Regulations 2000

Warwick International Limited
Dock Road
Mostyn
Holywell
Flintshire CH8 9HE

Permit number

BU2357

Contents

Introductory note

This introductory note does not form a part of the Permit

The following Permit is issued under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I.2000 No.1973), as amended, ("the PPC Regulations") to operate an installation carrying out activities covered by the description in Section 4.1 A(1)(a)(iv) and Section 5.1 A(1)(a) in Part 1 to Schedule 1 of the PPC Regulations, to the extent authorised by the Permit:

Section 4.1 - Organic Chemicals Part A (1)

(a) Producing organic chemicals such as –

(iv) organic compounds containing nitrogen, such as amines, amides, nitrous-, nitro- or azo-compounds, nitrates, nitriles, nitrogen heterocyclics, cyanates, isocyanates, di-isocyanates and di-isocyanate prepolymers;

Section 5.1 – Incineration and Co-incineration of Waste Part A (1)

(a) The incineration of hazardous waste in an incineration plant.

Section 5.3 – Disposal of Waste other than by Incineration or Landfill Part A (1)

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

Aspects of the operation of the installation which are not regulated by conditions of the Permit are subject to the condition implied by Regulation 12(10) of the PPC Regulations, i.e. the Operator shall use the best available techniques for preventing or, where that is not practicable, reducing emissions from the installation.

Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

In some sections of the Permit conditions require the Operator to use Best Available Techniques (BAT), in each of the aspects of the management of the installation, to prevent and where that is not practicable to reduce emissions. The conditions do <u>not</u> explain what is BAT. In determining BAT, the Operator should pay particular attention to relevant sections of the IPPC Sector guidance, appropriate Horizontal guidance (H1 to H4) and other relevant guidance.

A non-technical description of the installation is given in the Application, but the main features of the installation are as follows:

The Warwick International Mostyn installation produces up to 50,000 tonnes per year of tetra acetyl ethylene diamine (TAED), a bleaching activator used in the formulation of domestic washing powders. This scale of operation is in the medium range for bulk production of speciality organic chemicals. The installation consists of a continuous process plant producing the intermediate diacetyl ethylene diamine (DAED) by reacting acetic acid with ethylene diamine. Further reaction of DAED with acetic anhydride completes conversion to TriAED and TAED in the last stage of the continuous process and in three batch plants respectively. Finished product formulations are made by granulation of TAED with binder additives such as surfactants and polymers.

Most of the processes employ modern technology, including computerised automation through a distributed control system. All plants have automatic safety shutdown and alarm functions.

Some site process water is abstracted from a local stream under licence from the Environment Agency.

Point source releases to air include oxides of carbon and nitrogen from combustion processes used to raise steam, provide process heat and incinerate process residues. Natural gas is used as the main fuel, with gas oil as standby. Liquid process residues containing Acetic Acid are burnt in an on-site incinerator to recover heat by raising steam. The incinerator is regulated under the stringent requirements of the Hazardous Waste Incineration Directive. All releases are made via high level stacks.

Other process releases to air comprise predominantly Acetic Anhydride and Acetic Acid vapour that is passed through caustic soda scrubbing towers before release of residual vapours to air via stacks. Condensers are used to minimise releases from reaction and distillation processes into the vent streams.

Fugitive releases to air consist of Acetic Anhydride and Acetic Acid vapours from seals, safety valves, flanges, sample points and tanker loading displacement. Releases within process buildings are captured by local exhaust ventilation systems and passed through the caustic soda scrubbing towers.

Releases to controlled waters consist of process effluents from plant clean downs and vent scrubber draining and surface water run-off from production areas. The raw effluent contains Sodium Acetate and traces of other raw materials and products. These streams are mixed and treated with Caustic Soda in order to control acidity prior to discharge into the Dee Estuary. Treated effluent is discharged into the main Dee channel via a submerged pipeline between 2 and 4 hours after high tide only.

The Dee Estuary is a conservation site of European importance and special consideration has been given to the potential for impact due to the relatively high Chemical Oxygen Demand (COD) and temperature of the effluent. The discharge COD concentration currently exceeds the guidance levels. However, the volume and mass of the release are subject to continuing reductions and the rapid dilution provided within the estuary combined with the ready degradability of the primary constituents renders significant effects unlikely.

Noise levels produced by the installation at local residential properties are predicted to be above guidance levels and further investigation of the potential for reducing noise levels is a requirement of this permit.

The installation environmental management system (EMS) operated by Warwick International Limited has been independently certified to the international standard for EMS, ISO14001.

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

Other PPC Permits relating to this installation		
Permit holder	**Permit Number**	**Date of Issue**
Not applicable	-	-

Superseded Licences/Authorisations/Consents relating to this installation		
Holder	**Reference Number**	**Date of Issue**
Warwick International Limited	AK6365	28/02/94

Other activities may take place on the site of this installation which are not regulated under this Permit or any other PPC Permit referred to in the Table above. These activities include office-based commercial and administrative work.

Public Registers

Considerable information relating to Permits including the Application is available on public registers in accordance with the requirements of the PPC Regulations. Certain information may be withheld from public registers where it is commercially confidential or contrary to national security.

Variations to the Permit

This Permit may be varied in the future (by the Agency serving a Variation Notice on the Operator). If the Operator itself wants any of the Conditions of the Permit to be changed, it must submit a formal Application. The Status Log within the Introductory Note to any such Variation Notice will include summary details of this Permit, variations issued up to that point in time and state whether a consolidated version of the Permit has been issued.

Surrender of the Permit

Before this Permit can be wholly or partially surrendered, an Application to surrender the Permit has to be made by the Operator. For the application to be successful, the Operator must be able to demonstrate to the Agency that there is no pollution risk and that no further steps are required to return the site to a satisfactory state.

Transfer of the Permit or part of the Permit

Before the Permit can be wholly or partially transferred to another person, an Application to transfer the Permit has to be made jointly by the existing and proposed holders. A transfer will be allowed unless the Agency considers that the proposed holder will not be the person who will have control over the operation of the installation or will not comply with the conditions of the transferred Permit. If, however, the Permit authorises the carrying out of a specified waste management activity, the transfer will only be allowed if the proposed holder is also considered to be "a fit and proper person" as required by the PPC Regulations.

Talking to us

Please quote the Permit Number if you contact the Agency about this Permit.
To give a Notification under Condition 5.1.1, the Operator should use the Incident Hotline telephone number (0800 80 70 60) or any other number notified in writing to the Operator by the Agency for that purpose.

Status Log

Detail	Date	Comment
Application BU2357	Received 29/08/03	Duly made 16/09/03
Request to extend determination	Request dated 22/12/03	Request accepted 5/01/04
Response to request for information	Request dated 10/03/04	Response dated 14/04/04
Permit determined	14/05/04	

End of Introductory Note.

Permit
Pollution Prevention and Control Regulations 2000

ENVIRONMENT AGENCY

Permit

Permit number
BU2357

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations (SI 2000 No 1973), hereby authorises
Warwick International Limited ("the Operator"),

whose Registered Office (or principal place of business) is
Dock Road
Mostyn
Holywell
Flintshire
CH8 9HE

Company registration number 2386927

to operate an Installation at
Dock Road
Mostyn
Holywell
Flintshire
CH8 9HE

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

Signed	Date
P.S. Reynolds	14th May 2004

Paula Reynolds

Authorised to sign on behalf of the 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
Section 4.1 A(1)(a)(iv) : Producing organic chemicals	Producing organic compounds containing nitrogen, (amines)	Receipt of raw materials to desi of finished product, including internal recycling of raw materials.
Section 5.1 A(1)(a) : Incineration of hazardous waste	On-site incineration of process wastes with the recovery of heat	Incineration of distillation residues arising during the on-site production of tetra acetyl ethylene diamine (TAED).
Section 5.3 A(1)(c)(ii) : Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by physico-chemical treatment	Treatment and storage of process effluent and site surface water drainage	pH adjustment and storage of process effluent arising during the on-site production of tetra acetyl ethylene diamine (TAED).
Directly Associated Activity	Combustion of natural gas to raise steam and heat thermal transfer fluids	Gas oil combustion limited to periods of natural gas interruption and scheduled testing of the backup facility.

1.1.2 Where waste on site is subjected to activities that are exempt from control under the Waste Management Licensing Regulations 1994 then the wastes controlled under condition 1.1.1, above, shall be clearly identified and kept separate from such exempt waste activities and a record shall be kept of where such exempt activities are conducted.

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 at Schedule 5 to 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
1.4.1.1	The Operator shall submit a report to the Environment Agency reviewing the options for reducing the emissions of the pollutants listed below so they shall not exceed the concentrations indicated at standard conditions for emission point W1: i. BOD: 20-30 mg l^{-1}; ii. COD: 30-125 mg l^{-1}; iii. Suspended solids: 20-30 mg l^{-1}; iv. Total hydrocarbon oil: 1-3 mg l^{-1} If one of the options represents BAT the report shall contain a timetable for implementation of that option by **1 June 2007**.	6 months from the date of issue of the Permit
1.4.1.2	The Operator shall submit a report to the Environment Agency proposing a methodology for determination of the temperature differential between the Dee Estuary and the effluent discharged from the installation.	6 months from the date of issue of the Permit
1.4.1.3	The Operator shall submit a report to the Environment Agency reassessing BAT for noise with regard to the findings of the assessment contained within the Application and recommending further attenuation measures. If the report identifies improvements that represent BAT, the report shall contain a timetable for implementing by **31 December 2005** the improvements and submission of a revised noise monitoring survey and assessment report following implementation.	6 months from the date of issue of the Permit
1.4.1.4	The Operator shall provide to the Environment Agency, in writing, a protocol used by the Operator to determine 'uncertainty' values associated with each parameter to be reported for each emission point together with an indication of the likely uncertainty values associated with the test methods to be used.	6 months from the date of issue of the Permit
1.4.1.5	The Operator shall review the provision of MCERTS accreditation for the monitoring equipment, personnel and organisations employed for the emissions monitoring programme in condition 2.10.1 and propose to the Environment Agency a timetable for achieving this standard for any elements that are not MCERTS certified.	9 months from the date of issue of the Permit
1.4.1.6	The Operator shall submit to the Environment Agency in writing, a report confirming that all monitoring required for all parameters listed in Table 2.2.2 are representative. Specific derogation from requirements of BS EN 13284-1:2002 and ISO 10396:1993, as appropriate for particulate and gaseous emissions respectively, are to be indicated. The report shall include the feasibility, cost and timescale required to implement changes to meet the standard requirements.	1 year from the date of issue of the Permit

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 There are no pre-operational conditions

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 2.1 and 2.2 given in pages 16-47 of section 2.1, page 47-70 of section 2.2 and Appendix 9 of the application.	29/08/04

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 4.1.8), 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 2.2.1 shall only arise from the source(s) specified in that Table.

Table 2.2.1 : Emission points to air

Emission point reference or description	Source	Location of emission point
A1	Tank Farm 1 vent	3 metre high stack
A2	Plant 5 caustic scrubber vent	15 metre high stack
A3	Plant 6 caustic scrubber vent	15 metre high stack
A4	Tank Farm 2 vent	3 metre high stack
A5	Filter Dryer plant 2 scrubber vent	26 metre high stack
A6	Silo 1-4 scrubber vent	19 metre high stack
A7	Silo 5-9 scrubber vent	21 metre high stack
A8	EDA bulk storage scrubber vent	12.9 metre high stack
A9a	Granulation 2 system filter vent (white)	16.5 metre high stack
A9b	Granulation 2 system filter vent (coloured)	9.5 metre high stack
A10	Granulation 3 system filter vent	19 metre high stack
A11	Granulation 4 system filter vent	16.5 metre high stack
A12	Warehouse 1 (25 kg bagger unit dust extraction)	2.7 metre high stack
A13	Warehouse 2 (25 kg bagger unit dust extraction)	2.7 metre high stack
A14	Distillation residue incinerator	30 metre high stack
A15	Plant 5 LUWA Unit 2	7.5 metre high stack
A16	Boiler 103	30 metre high stack
A17	Boiler 201	30 metre high stack
A18	Boiler 202	30 metre high stack
A19	Boiler 301	30 metre high stack
A20	Continuous DAED plant scrubber vent	26 metre high stack
A21	Continuous DAED HT fluid heater	27 metre high stack
A22	Continuous DAED 2 plant scrubber vent	26 metre high stack
A23	Continuous DAED storage tanks scrubber vent	26 metre high stack
A24	Plant 5 Distillation Unit 2	7.5 metre high stack
A25[Note 1]	Plant 4 caustic scrubber vent	14.7 metre high stack

Note 1: Plant 4 releases are to cease after 31/12/04

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

Table 2.2.2 : Emission limits to air and monitoring

Emission point reference	Parameter	Limit (including Reference Period)[Note 1]	Monitoring frequency	Monitoring method [Note 2]
A2, A3, A5, A6, A7, A15, A20, A22, A23, A24, A25	Acetic acid and anhydride (as Acetic acid)	50 mg/m^3 (hourly average)	Quarterly	Spot sample
A9a, A9b, A10, A11, A12, A13	Particulate matter	No visible release	-	-
A16, A17, A18, A19, A21	Oxides of nitrogen (as NO_2)	170 mg/m^3 (hourly average)	Annual	Spot sample
A16, A17, A18, A19, A21	Carbon monoxide	70 mg/m^3 (hourly average)	Annual	Spot sample

Note 1. See Section 6 for reference conditions

Table 2.2.2 : Emission limits to air and monitoring – cont'd.

Parameters	Emission Point A14				
	Units	Half Hour Average	Daily Average	Other or Periodic	Monitoring Requirements[Note 2]
Particulate matter	mg/Sm^3	30 (all ½ hourly values over year) or 10 (for 97% of ½ hourly values over year)	10	150 (half hourly average)	½ hr average and daily average; continuous measurement. See Notes 3 and 4
VOCs as Total Organic Carbon (TOC)	mg/Sm^3	-	-	20	½ hr average; quarterly periodic measurement. See Note 3
Carbon monoxide	mg/Sm^3	100 (all ½ hourly values in any 24 hour period of operation) or limit in "other" column	50	150 (for 95% of 10 minute values over year)	10 minute, 1/2hr average and daily average; continuous measurement. See Notes 3 and 5

Table 2.2.2 : Emission limits to air and monitoring – cont'd.					
Parameters	**Emission Point A14**				
	Units	**Half Hour Average**	**Daily Average**	**Other or Periodic**	**Monitoring Requirements[Note 2]**
Oxides of nitrogen (NO and NO_2 expressed as NO_2)	mg/Sm^3	-	400	-	Daily average of ½ hr averages in any 24 hour period; continuous measurement. See Note 3
Cadmium & thallium and their compounds (total)	mg/Sm^3	-	-	0.1	Bi-annual periodic measurement, average value over sample period of between 30 minutes and 8 hours. See Notes 3 and 6
Mercury and its compounds	mg/Sm^3	-	-	0.1	Bi-annual periodic measurement, average value over sample period of between 30 minutes and 8 hours. See Notes 3 and 6
Heavy Metals Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V and Sn and their compounds (total)	mg/Sm^3	-	-	1.0	Bi-annual periodic measurement, average value over sample period of between 30 minutes and 8 hours. See Notes 3 and 6
Dioxins/furans	ng/Sm^3 I-TEQ	-	-	0.1	Bi-annual periodic measurement, average value over sample period of between 6 and 8 hours. Determination in accordance with BS EN 1948 See Notes 3 and 7

Note 2. Monitoring methods shall use standards in the following order of priority, unless equivalent methods have been agreed with the Environment Agency in writing:
. Comité Européen de Normalisation (CEN)
. British Standards Institution (BSI)
. International Standardisation Organisation (ISO)
. United States Environmental Protection Agency (US EPA)
. American Society for Testing and Materials (ASTM)
. Deutches Institut für Normung (DIN)
. Verein Deustcher Ingenieure (VDI)
. Association Française de Normalisation (AFNOR)

Note 3. "Sm^3" denotes one metre cubed of dry gas standardised to temperature 273K, pressure 101.3kPa and 11% oxygen. However this standardisation shall only be done if the oxygen content measured over the same period as for the pollutant concerned exceeds 11%. Continuous measurements shall be made in the exhaust gas after the abatement devices for concentration of oxygen, pressure, and temperature. The continuous measurement of the water vapour content shall not be necessary, provided that the sampled exhaust gas is dried before analysis.

Note 4. Emissions of dust [particulate matter] shall be continuously monitored and must not exceed the daily average emission limit value as a rolling 24 hour average. In addition the emission limit value for all half-hourly averages over the whole year or the emission limit value for 97% of the half-hourly averages over the whole year must not be exceeded.

Note 5. Emissions of carbon monoxide shall be continuously monitored and must not exceed the daily average emission limit value as a rolling 24 hour average. In addition the emission limit value for all half-hour average values in any 24 hour period or the emission limit value for 95% of all 10-minute average values over the whole year must not be exceeded.

Note 6. Metals include both gaseous, vapour and solid phases as well as their compounds (expressed as the metal or total as specified).

Note 7. "ITEQ" means Integrated Toxic Equivalent Factor determined according to Annex 1 of the Hazardous Waste Incineration Directive.

2.2.1.4 Should any of the emission limit values specified for Emission Point A14 in Table 2.2.2 of this Permit be exceeded, then the Environment Agency shall be informed without delay. The incinerator shall not continue to be fed waste while failing to comply with these emission limits, until such time as the Environment Agency permits the resumption of feeding such waste, except in the following circumstances:

2.2.1.4.1 The maximum period that the incinerator shall continue to burn waste in the event of technically unavoidable stoppages, disturbances, or failures of the purification devices or the measurement devices, during which the emission limit values to air for Emission Point A14 set out in Table 2.2.2 are exceeded shall in no circumstances exceed 4 hours. The cumulative duration of operation in such conditions over one year shall be less than 60 hours.

2.2.1.4.2 In the case of any technically unavoidable stoppages, disturbances, or failures of the purification devices or the measurement devices where it is evident that a rapid recovery cannot be effected, the Operator shall reduce or close down operations as soon as practicable until normal operations can be restored.

2.2.1.4.3 During any such disturbance, breakdown or failure, the total dust content of emissions from the incinerator (Emission Point A14) shall not exceed 150 mg/m^3 expressed as a half-hourly average. In addition the authorised limit values for CO shall not exceed either the daily average or half-hourly average limit as set out in Table 2.2.2. Permitted combustion conditions must be maintained.

2.2.1.5 When calculating the average values referred to in Table 2.2.2 the averaging period shall exclude; periods of technically unavoidable stoppages, disturbances or failure of the reporting devices or measurement devices as described in condition 2.2.1.4 and periods when waste is not being burnt.

2.2.1.6 Total emissions to air in any year of a substance listed in Table 2.2.3 should not exceed the relevant limit in that Table.

Table 2.2.3 Annual limits

Substance	Limit – kg
Acetic acid (from release points A1-A7, A15, A20, A22, A23, A24, A25)	15,000
Oxides of nitrogen (from release points A14, A16-19, A21)	40,000

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 to 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 2.2.4 shall only arise from the source(s) specified in that Table.

Table 2.2.4: Emission point to water

Emission Point Reference or description	Source	Receiving Water
W1 situated at grid reference SJ16248090	Process Effluent Streams, surface waters drainage and cooling water blow down.	Dee Estuary (Note 1 and 2)
W2 situated at grid reference SJ15898079	Uncontaminated site drainage from West end of site under flood conditions via Port of Mostyn.	Dee Estuary (Note 3)

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

2.2.2.5 Where a substance is specified in Table 2.2.5 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 2.2.5 : Emission limits to water and monitoring

Emission point reference	Parameter	Limit (including Reference Period)	Monitoring frequency	Monitoring method (Note 4)
W1	Chemical oxygen demand (COD)	6000 mg/l	Each discharge	Composite sample
W1	Chemical oxygen demand (COD)	10,000 kg/day	Daily	-
W1	Biochemical oxygen demand (BOD)	3000 mg/l	Monthly	Composite sample
W1	Suspended solids	250 mg/l	Each discharge	Composite sample
W1	Ammoniacal Nitrogen	5 mg/l	Each discharge	Composite sample
W1	Total hydrocarbon oil	-	Each discharge	Composite sample
W1	Halogenated organic compounds (total as AOX)	-	Monthly	Composite sample
W1	Total cyanides (as HCN)	-	Monthly	Composite sample
W1	Copper	-	Monthly	Composite sample
W1	Daily discharge volume	4500 m^3	Daily	-
W1	Tidal period discharge volume	2250 m^3	Tidal period	-
W1	Rate of discharge	375 litres/second	Each discharge	-
W1	Temperature differential between Dee Estuary and effluent	No limit applies	Each discharge	Estuary temperature determination to be agreed in writing with the Environment Agency
W1	Effluent temperature	35°C (1st May-31st October) 25°C (1st November-30th April)	Each discharge	-
W1	Maximum pH	9	Each discharge	-
W1	Minimum pH	5	Each discharge	-

Note 1: Release of effluent from W1shall take place only between 2 and 4 hours after high tide.
Note 2: The maximum volume discharged between high water plus 2 hours and high water plus 3 hours shall not exceed 1350m^3 and the maximum volume discharged between high water plus 3 hours and high water plus 4 hours shall not exceed 900m^3.
Note 3: Release of uncontaminated surface water drainage from W2 shall take place only under conditions of site flooding and with the prior agreement of the Port of Mostyn Authority. A representative sample of the discharge shall be taken and analysed for the above parameters.
Note 4: Monitoring methods shall use standards in the following order of priority, unless equivalent methods have been agreed with the Environment Agency in writing:
. Comité Européen de Normalisation (CEN)
. British Standards Institution (BSI)
. International Standardisation Organisation (ISO)
. United States Environmental Protection Agency (US EPA)
. American Society for Testing and Materials (ASTM)
. Deutches Institut für Normung (DIN)
. Verein Deustcher Ingenieure (VDI)
. Association Française de Normalisation (AFNOR)

2.2.2.6 Total emissions to water in any year of a substance listed in Table 2.2.6 shall not exceed the relevant limit in that Table

Table 2.2.6 Annual emission limits	
Substance	**Limit – te**
Chemical oxygen demand (COD)	1,200

Emissions to sewer

2.2.2.7 No emission from the Permitted installation shall be made to sewer.

2.2.2.8 No condition applies.

2.2.2.9 No condition applies.

2.2.2.10 No condition applies.

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, where relevant.

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.

2.2.4.2 No condition applies.

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.

2.2.7 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 No condition applies.

2.2.8 Equivalent Parameters or Technical Measures

2.2.8.1 The Operator shall comply with the requirements specified in Table 2.2.11, which supplement or replace emission limit values in accordance with Regulation 12(8) of the PPC Regulations.

Table 2.2.11 Equivalent parameters and technical measures

Parameter or measure	Requirement or description of measure, and frequency if relevant
Maximum Sulphur content of gas oil used at the installation	0.2% until 31st December 2007 0.1% from 1st January 2008
Maximum Mercury content of Caustic Soda used at the installation	0.15 ppm w/w
Incinerator feed and feed rate	Distillation residues produced by the TAED process operated at the installation as described in the Application at a maximum rate of 750 kg/hour
Incinerator operation	The incinerator shall be operated such that the gas resulting from the incineration of waste is raised, after the last injection of combustion air, in a controlled and homogeneous fashion, to a temperature of at least 850°C for at least 2 seconds in the presence of at least 6% oxygen.
Incinerator waste feed conditions	Waste shall only be fed to the incinerator when the combustion chamber temperature is in excess of 850°C after the last injection of combustion air, the oxygen level is in excess of 6% (wet) by volume and when the continuous emissions limits are being complied with subject to abnormal operation conditions specified in condition 2.2.1.4.
Calibration of incinerator continuous emission monitors	Calibration of the incinerator automated, continuous, measurement systems shall be carried out using reference measurement methods as specified by the appropriate CEN-standards.
Calibration of incinerator continuous emission monitors	At the daily emission limit value, the values of the 95% confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values: Carbon monoxide – 10% Particulate matter – 30% Nitrogen Dioxide – 20%

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 if such event occur;

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 site 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 recycled or recovered unless technically and/or economically impossible.

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 identify the best practicable environmental options for waste disposal.

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 H2 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 Section 2.8 of the Application. 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.

2.10 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 2.2.2 and 2.2.5, 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 The Operator shall carry out environmental or other specified monitoring to the frequencies and methods described in Table 2.10.1.

Table 2.10.1 : Other monitoring requirements

Emission point reference or source or description of point of measurement	Substance or parameter	Monitoring frequency	Monitoring method (Note 1)	Other specifications
Incinerator combustion chamber inner wall	Gas temperature resulting from incineration of distillation residues	Continuous	-	-
Incinerator A14	Moisture (Note 2)	Continuous	-	Exhaust gas after abatement
Incinerator A14	Oxygen	Continuous	-	Exhaust gas after abatement
Incinerator A14	Pressure	Continuous	-	Exhaust gas after abatement
Incinerator A14	Temperature	Continuous	-	Exhaust gas after abatement

Note 1: Monitoring methods shall use standards in the following order of priority, unless equivalent methods have been agreed with the Environment Agency in writing:
. Comité Européen de Normalisation (CEN)
. British Standards Institution (BSI)
. International Standardisation Organisation (ISO)
. United States Environmental Protection Agency (US EPA)
. American Society for Testing and Materials (ASTM)
. Deutches Institut für Normung (DIN)
. Verein Deustcher Ingenieure (VDI)
. Association Française de Normalisation (AFNOR)

Note 2: The continuous measurement of water vapour content shall not be necessary, provided that the sampled exhaust gas is dried before analysis.

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.

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 6 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 This is not a multi-Operator installation

2.13 Transfer to effluent treatment plant

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

2.13.2 No condition applies.

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 4 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 and notifications required by Regulation 16 of the PPC Regulations 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, under condition 2.10, as follows:-

4.1.2.1 in respect of the parameters and emission points specified in Table S2 to Schedule 2;

4.1.2.2 for the reporting periods specified in Table S2 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 S4.2 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 two 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.

4.1.8 The Operator shall maintain the Site Protection and Monitoring Programme (SPMP) submitted under condition 4.1.7, and shall carry out regular reviews of it. 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.

5 Notifications

5.1.1 The Operator shall notify the Agency **without delay** of:-

5.1.1.1 the detection of an emission of any substance which exceeds any limit or criterion in this Permit specified in relation to the substance;

5.1.1.2 the detection of any fugitive emission which has caused, is causing or may cause significant pollution unless the quantity emitted is so trivial that it would be incapable of causing significant pollution;

5.1.1.3 the detection of any malfunction, breakdown or failure of plant or techniques which has caused, is causing or has the potential to cause significant pollution; and

5..1.1.4 any accident which has caused, is causing or has the potential to cause significant pollution.

5.1.2 The Operator shall submit written confirmation to the Agency of any notification under condition 5.1.1, by sending:-

5.1.2.1 the information listed in Part A of Schedule 1 to this Permit within 24 hours of such notification; and

5.1.2.2 the more detailed information listed in Part B of that Schedule as soon as practicable thereafter;

and such information shall be in accordance with 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.

5.1.8 The Operator shall notify the Agency in writing of, any known or planned introduction or material change in respect to emissions from the permitted installation to water, that may increase or introduce into the effluent any "dangerous substance" as defined in list I and List II of the dangerous substances directive 76/464/EEC and its daughter directives.

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.

"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, 2.2.2.5, 2.2.2.8 or 2.2.2.9 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.

"Land Protection Guidance" means the version of the Agency guidance note "H7 - *Guidance on the Protection of Land under the PPC Regime: Application Site Report and Site Protection and Monitoring Programme",* including its appended templates for data reporting, which is current at the time of issue of the Permit.

"$L_{Aeq,T}$" 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.

"PPC Regulations" means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 (as amended) and words and expressions defined in the PPC Regulations shall have the same meanings when used in this Permit save to the extent they are specifically defined in 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 PPC Regulations.

Part A

Permit Number	
Name of Operator	
Location of Installation	
Location of the emission	
Time and date of the emission	

Substance(s) emitted	Media	Best estimate of the quantity or the rate of emission	Time during which the emission took place

Measures taken, or intended to be taken, to stop the emission	

Part B

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 or harm which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Warwick International Limited

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 S2: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins	
Oxides of nitrogen mg m^{-3}	A16, A17, A18, A19, A21	Every 12 months	01/01/04	
Oxides of nitrogen mg m^{-3}	A14	Every 3 months	01/04/04	
Oxides of nitrogen (annual mass) kg	A14, A16-19, A21	Every 12 months	01/01/04	
Carbon monoxide mg m^{-3}	A16, A17, A18, A19, A21	Every 12 months	01/01/04	
Carbon monoxide mg m^{-3}	A14	Every 3 months	01/04/04	
Acetic acid and anhydride (as Acetic acid) mg m^{-3}	A2, A3, A5, A6, A7, A15, A20, A22, A23, A24, A25	Every 12 months	01/01/04	Safe temporary means of access shall be provided upon request by the Environment Agency to enable monitoring of emission points A15 and A24.
Acetic acid (annual mass) kg	A1-A7, A15, A20, A22, A23, A24, A25	Every 12 months	01/01/04	
VOCs as Total Organic Carbon (TOC) mg m^{-3}	A14	Every 3 months	01/04/04	
Particulate matter mg m^{-3}	A14	Every 3 months	01/04/04	
Cadmium + thallium and their compounds (in total) mg m^{-3}	A14	Every 12 months	01/01/04	
Mercury and its compounds (in total) mg m^{-3}	A14	Every 12 months	01/01/04	
Sb+As+Pb+Cr+Co+Cu+ Mn+Ni+V+Sn and their compounds (in total) mg m^{-3}	A14	Every 12 months	01/01/04	
Dioxins/furans (I-TEQ, WHO-TEQ) ng m^{-3}	A14	Every 12 months	01/01/04	

Chemical oxygen demand mg l^{-1}	W1	Every 3 months	01/04/04	
Chemical oxygen demand kg/day	W1	Every 3 months	01/04/04	
Chemical oxygen demand (annual mass) kg	W1	Every 12 months	01/01/04	Reported on Form PI1
Biochemical oxygen demand mg l^{-1}	W1	Every 3 months	01/04/04	
Suspended solids mg l^{-1}	W1	Every 3 months	01/04/04	
Ammoniacal Nitrogen mg l^{-1}	W1	Every 3 months	01/04/04	
Total hydrocarbon oil mg l^{-1}	W1	Every 3 months	01/04/04	
Halogenated organic compounds (total as AOX) mg l^{-1}	W1	Every 3 months	01/04/04	
Total cyanides (as HCN) mg l^{-1}	W1	Every 3 months	01/04/04	
Copper mg l^{-1}	W1	Every 3 months	01/04/04	
pH	W1	Every 3 months	01/04/04	
Daily discharge volume m^3	W1	Every 3 months	01/04/04	
Tidal period discharge volume m^3	W1	Every 3 months	01/04/04	
Rate of discharge l s^{-1}	W1	Every 3 months	01/04/04	
Temperature differential between Dee Estuary and effluent °C	W1	Every 3 months	01/04/04	
Effluent temperature °C	W1	Every 3 months	01/04/04	
Water usage	-	Every 12 months	01/01/04	
Energy usage	-	Every 12 months	01/01/04	
Waste disposal and/or recovery.	-	Every 12 months	01/01/04	

Schedule 3 - Forms to be used

Table S3: Reporting Forms		
Media / parameter	**Form Number**	**Date of Form**
Air (TAED process)	A1	4/05/04
Air (Combustion processes)	A2	4/05/04
Air (Incinerator CEM/VOC)	A3	4/05/04
Air (Incinerator Metals/dioxins)	A4	4/05/04
Air (annual mass releases)	A5	4/05/04
Water (excluding sewer)	W1	4/05/04
Energy	E1	4/05/04
Waste return	R1	4/05/04
Water usage	WU1	4/05/04
Performance indicators	PI1	4/05/04

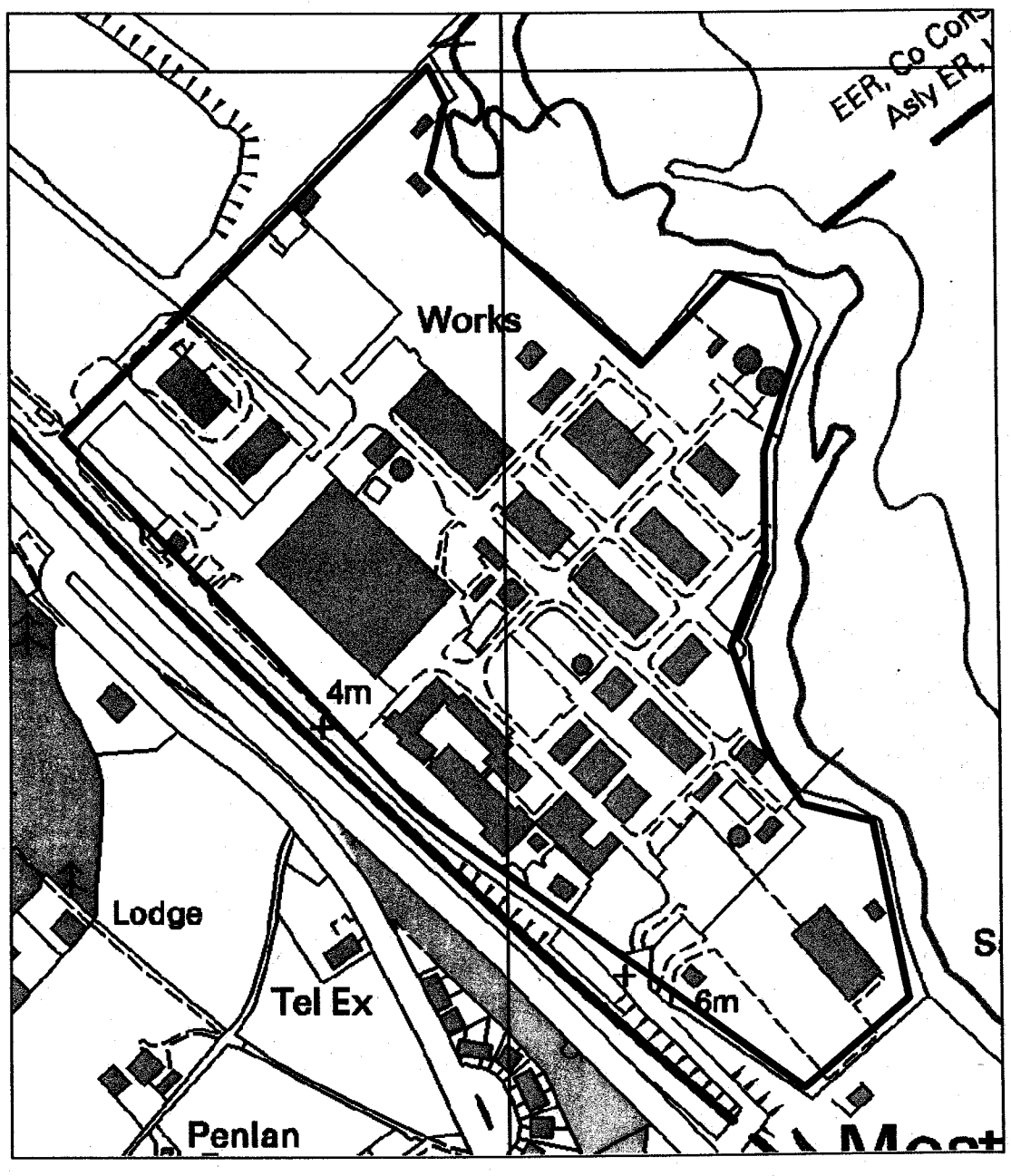
Schedule 4 - Reporting of performance data

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	
Production of TAED	(tonnes)

Table S4.2: Performance parameters			
Parameter		**Frequency of assessment**	**Performance indicator**
Effluent chemical oxygen demand (COD)		Annually	kg COD/tonne product
Total volatile organic compounds (VOC) released		Annually	kg/tonne product

Schedule 5 - Site Plan



END OF PERMIT