Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Anglian Water Services Limited

Colchester Water Recycling Centre
Haven Road
Colchester
Essex
CO2 8HT

Variation number

ASETS/1046/V001

Permit number

ASETS/1046

Colchester Water Recycling Centre
Permit number ASETS/1046

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. All the conditions of the permit have been varied and are subject to the right of appeal.

This permit variation and consolidation is to reflect asset improvements that have been agreed between the Environment Agency and Anglian Water Services Limited as part of the National Environment Programme. This permit requires the operator to install event duration monitoring (EDM) with telemetry on the storm overflow and emergency overflow. This should be completed by the agreed delivery date of 31/03/2018.

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**
Permit determined ASETS/1046	18/01/1990	Permit issued to Anglian Water Services Limited.
Permit modified ASETS/1046A	25/09/1990	Short term variation to relax suspended solids and BOD limits.
Variation determined ASETS/1046B	03/04/1997	Short term variation to relax suspended solids and BOD limits.
Variation determined ASETS/1046C	01/04/1999	Short term variation to relax suspended solids and BOD limits.
Permit modified ASETS/1046	15/12/2000	
Variation determined ASETS/1046E	20/11/2006	Full permit rewrite.
Permit modified ASETS/1046G	14/01/2008	OSM conditions added by schedule.
Permit modified ASETS/1046H	24/03/2010	Replacing conditions
Permit modified ASETS/1046H	24/03/2010	Full permit rewrite.
Environment Agency initiated variation ASETS/1046/V001	21/11/2017	Variation of permit initiated under PR14 review programme to incorporate improvements to be delivered under AMP6.
Variation determined ASETS/1046	15/03/2018	Varied and consolidated permit issued in modern condition format.

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 and consolidates

Permit number

ASETS/1046

Issued to

Anglian Water Services Limited ("the operator")

Lancaster House
Lancaster Way
Ermine Business Park
Huntingdon
Cambridgeshire
United Kingdom
PE29 6XU

company registration number **02366656**

to operate water discharge activities at

Colchester Water Recycling Centre
Haven Road
Colchester
Essex
CO2 8HT

to the extent set out in the schedules.

The notice shall take effect from 31/03/2018

Name	Date
David Griffiths	**15/03/2018**

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

ASETS/1046

This is the consolidated permit referred to in the variation and consolidation notice for variation ASETS/1046/V001 authorising,

Anglian Water Services Limited ("the operator"),

Lancaster House
Lancaster Way
Ermine Business Park
Huntingdon
Cambridgeshire
United Kingdom
PE29 6XU

company registration number **02366656**

to operate water discharge activities at

Colchester Water Recycling Centre
Haven Road
Colchester
Essex
CO2 8HT

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

Name	Date
David Griffiths	**15/03/2018**

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 so far as is reasonably practicable, including those risks arising from operations, maintenance, accidents, incidents, non-conformances 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 the permit.

2 Operations

2.1 Permitted activities

2.1.1 The only activities authorised by the permit are the activities specified in schedule 1 table S1.1.

2.2 The site

2.2.1 The discharge activities shall take place at the discharge points marked on the site plans at schedule 7 to this permit, and as listed in table S3.2; and, the operating techniques that are the subject of conditions prefixed by 2.3 shall be applied at the locations shown, or otherwise described, in schedule 7.

2.3 Operating techniques

2.3.1 For the activity A5 referenced in schedule 1, table S1.1 the activity 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 For the activity A1 referenced in schedule 1, table S1.1 the operator shall comply with the relevant requirements of the Urban Waste Water Treatment (England and Wales) Regulations 1994.

2.3.3 For the discharge(s) specified in table S3.3a:

(a) The discharge shall only occur when and only for as long as the flow passed forward is equal to or greater than the overflow setting indicated due to rainfall and/or snow melt.

(b) Off-line storm storage must be fully utilised before a discharge occurs. It shall only fill when the flow passed forward is equal to or greater than the overflow setting indicated due to rainfall and/or snow melt and shall be emptied and its contents returned to the continuation flow as soon as reasonably practicable. The minimum off-line storm storage required is specified in table S3.3a.

(c) The discharge shall not be comminuted or macerated and shall have passed through screens as specified and shall not contain a significant quantity of solid matter with a particle size greater than any indicated. All screenings shall be removed from the discharge.

(d) Where a mechanically cleaned screen is installed, a telemetry alarm system shall be installed and maintained, as far as reasonably practicable, so as to give the operator immediate notification of a failure of the screen cleaning mechanism, unless otherwise agreed in writing by the Environment Agency. The operator shall take all appropriate measures to return the screen cleaning mechanism to normal operation as soon as reasonably practicable after receipt of notification of the failure.

(e) Event duration monitoring telemetry equipment shall be installed and maintained, as far as reasonably practicable, so as to give the operator notification as soon as reasonably practicable, of a failure of the event duration monitoring equipment, unless otherwise agreed in writing by the Environment Agency. The operator shall take all appropriate measures to return event duration monitoring equipment to normal operation as soon as reasonably practicable after receipt of notification of the failure.

2.3.4 For the activities A2, A3, A4 and A5 referenced in schedule 1, table S1.1 where the discharge results in unsatisfactory solid matter being visible in the receiving waters or on the banks or shoreline, in the vicinity of the outfall, the operator shall take all reasonable steps to collect and remove such matter as soon as reasonably practicable.

2.3.5

(a) The discharge in schedule 3 table S3.3b shall consist solely of biologically treated sewage effluent which has been disinfected by means of ultra violet (UV) radiation as specified in that table.

(b) The full dose limit in schedule 3 table S3.3b must be exceeded in at least 99% of the specified measurements in any period of 12 consecutive months.

(c) No more than 10% of measurements taken consecutively during any 24 hour period from midnight to midnight should fall below the 50% dose limit specified in schedule 3 table S3.3b.

(d) In the event of a failure of the flow monitor and/or UV transmittance meter used in the control of the UV dosing system:

(i) the maximum available number of duty banks of UV lamps shall be automatically activated;

(ii) the minimum applied UV dose at maximum effluent flow rates calculated using the 5%ile transmittance shown in schedule 3 table S3.3b, shall not be less than the full dose limit shown in that table.

(e) There shall be no failure to achieve the full dose limit in schedule 3 table S3.3b which is as a result of planned maintenance.

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.

3 Emissions and monitoring

3.1 Emissions to water

3.1.1 The limits given in schedule 3 table S3.1 shall not be exceeded.

3.1.2 The limits in schedule 3 table S3.1 to which this condition applies may be exceeded where: in any series of samples of the discharge taken at regular but randomised intervals in any period of twelve consecutive months as listed in column 1 of schedule 3A, no more than the relevant number of samples, as listed in column 2 of schedule 3A, exceed the applicable limit for that relevant parameter. For relevant parameters subject to schedule 3C the assessment is based on a fixed calendar year from 1 January to 31 December inclusive.

3.1.3

(a) For the emission limits in schedule 3 table S3.1 to which this condition applies, no sample of the discharge taken at a time when unusual weather conditions are adversely affecting the operation of the waste water treatment works, shall be taken into account in deciding whether or not the emission limit has been complied with.

(b) On any occasion where unusual weather conditions adversely affect the operation of the waste water treatment works, the operator shall use its best endeavours to mitigate that adverse effect.

(c) For any sample of the discharge taken to be considered for the purposes of (a) above, the operator shall notify the Environment Agency in writing within 14 days of becoming aware that an emission limit has been exceeded. That notification shall include a full description of the unusual weather conditions and their impact on the operation of the works.

3.1.4

(a) For the emission limits in schedule 3, table S3.1 to which this condition applies, no sample of the discharge taken at a time when abnormal operating conditions are adversely affecting the operation of the waste water treatment works, shall be taken into account in deciding whether or not the emission limit has been complied with.

(b) On any occasion where abnormal operating conditions adversely affect the operation of the waste water treatment works, the Operator shall use its best endeavours to mitigate that adverse effect.

(c) For any sample of the discharge taken to be considered for the purposes of (a) above, the Operator shall notify the Environment Agency in writing within 14 days of becoming aware that an emission limit has been exceeded. That notification shall include a full description of the abnormal operating conditions and their impact on the operation of the works.

3.1.5

(a) If the measured Dry Weather Flow exceeds the permitted Dry Weather Flow limit then the operator shall, as soon as is practicable, investigate the reasons for the exceedance. The operator shall report the reasons for the exceedance to the Environment Agency and the steps that it proposes to take to restore compliance. An exceedance of the Dry Weather Flow limit shall not be recorded as a failure if the operator takes appropriate steps to restore compliance;

(b) If the measured Dry Weather Flow exceeds the permitted Dry Weather Flow limit because of unusual rainfall during the 12-month period, then it will not be recorded as a failure of the Dry Weather Flow limit. For the purposes of this condition, unusual rainfall shall mean rainfall that causes significantly higher sewage flows during the three-month period that normally records the lowest flows;

(c) The permitted Dry Weather Flow limit is set at the operator’s planned annual 80% exceeded flow;

(d) For compliance with this permit, the measured Dry Weather Flow is that total daily volume that is exceeded by 90% of the recorded measured total daily volume values in any period of 12 months; and

(e) For unusual rainfall to be considered, the operator shall notify the Environment Agency and provide supporting evidence as part of the normal specified data returns.

3.2 Emissions of substances not controlled by emission limits

3.2.1 For the activity A1 referenced in schedule 1, table S1.1 the operator shall take appropriate measures to minimise so far as reasonably practicable the polluting effects of the emissions of substances in the discharge not controlled by emission limits (excluding odour).

3.3 Monitoring

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

(a) point source emissions specified in tables S3.1 and S3.4;

(b) inlet quality specified in tables S3.1 and S3.4

(c) efficacy monitoring specified in tables S3.4 and S3.5.

3.3.2 The operator shall maintain records of all monitoring required by this permit.

3.3.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.3.4 Accessible monitoring points shall be provided and maintained to enable the emissions monitoring programme and/or other monitoring to be carried out at the monitoring points specified in table S3.4 of schedule 3 and shown marked on the site plans in schedule 7.

3.3.5 The monitoring programme for the parameters subject to schedule 3B shall be:

(a) pre-scheduled to cover a calendar year and the programme recorded before the start of a calendar year sample period; and

(b) spot samples collected at approximately equal intervals during the year, including samples from different days of the week and different times. Approximately 10% of samples should be outside the normal sampling window which is 9am-3pm, Monday to Friday.

3.3.6 After becoming aware, or following a notification that a sample has not been taken on the schedule 3B Monitoring Programme pre-scheduled date, or is lost, or a result for that sample cannot be reported, the operator shall record the details and reschedule the sample.

3.3.7 The monitoring programme for the parameters subject to schedule 3C shall be:

(a) pre-scheduled before each calendar year;

(b) Unless otherwise agreed in writing by the Environment Agency, the operator shall submit the monitoring programme for the following calendar year to the Environment Agency before the 1st of December; and

(c) samples must be collected at approximately equal intervals during the year from different days of the week and approximately 10% of samples should be taken at weekends.

3.3.8 Unless otherwise agreed in writing by the Environment Agency, after becoming aware, or following notification that a sample has not been taken on the schedule 3C Monitoring Programme pre-scheduled date, or is lost, or a result for that sample cannot be reported, the operator shall notify the Environment Agency of the missed event and the reschedule date as soon as reasonably practicable.

3.3.9 Continuous recorders, with on-site visual display from which readings may be readily obtained, shall be provided and maintained by the operator and the following shall be measured and recorded at 15 minute intervals:

(a) the instantaneous flow rate through each UV irradiation channel;

(b) the instantaneous measured applied UV dose for each UV irradiation channel;

(c) the number of operational UV lamps for each UV irradiation channel;

(d) the instantaneous measured UV transmittance at the inlet to the UV irradiation plant;

(e) any other parameters used in calculating the UV dose.

3.3.10 For the activities A2 A3, A4 and A5 referenced in schedule 1, table S1.1 an event duration monitoring telemetry system shall be installed and maintained, as far as reasonably practicable so as to give the operator data available of discharge occurrence (start and stop) at the frequency defined in table S3.1.

4 Information

4.1 Records

4.1.1 All records required to be made by schedule 3, 4 and 5 to 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.

4.1.2 The operator shall maintain convenient access, in either electronic or hard copy, to the records, plan and management system required to be maintained by this permit.

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 Within the time period after the end of the reporting period specified in schedule 4 table S4.1 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 monitoring 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 S4.2; and

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

4.2.3

(a) The operator shall supply the relevant Local Food Authority / Environmental Health Authority with an annual written report of the operation of the combined sewer overflow, to include date, start time and duration of each spill in accordance with the format provided by the Environment Agency.

(b) Provision of this report will coincide with the annual classification under the EU Food Hygiene Regulations (852/853/854). The report shall cover the 12 month period 1 January – 31 December inclusive, and shall be provided by the end of the following February.

4.3 Notifications

4.3.1 The Environment Agency shall be notified as soon as reasonably practicable following detection, within the site of the regulated facility of:

(a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution; and

(b) any breach of a limit specified in schedule 3 table S3.1 (including individual exceedances of limits which are covered by condition 3.1.2).

Any other significant adverse environmental effects, which may have been caused by the activity, shall also be notified to the Environment Agency as soon as reasonably practicable following detection.

4.3.2 The information provided under condition 4.3.1 shall be supported 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 specified in schedule 3B/3C, 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.

4.3.5 For the activity A1 referenced in schedule 1, table S1.1 where the operator proposes to make a change in the nature of the activity by increasing the concentration of, or the addition of, or allowing the introduction of, a substance to the activity to an extent that the operator considers could have a significant adverse environmental effect on the receiving waters, and the change is not permitted by emission limits specified within schedule 3 table S3.1 or the subject of an application for approval under the EP Regulations or under the terms of this permit:

(a) the Environment Agency shall be notified in writing at least 14 days before the increase or addition or allowing the introduction; and

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

4.3.6 The operator shall notify the Local Food Authority / Environmental Health Authority in the event of the discharge of sewage in an emergency from any discharge points listed in schedule 3 Table S3.2. Such notification must be made as soon as practicable and no later than 24 hours after the event, and shall detail the reasons why the situation occurred, and the actions taken by the operator.

4.3.7 The operator shall notify the Local Food Authority / Environmental Health Authority in the event of a discharge of sewage effluent which has not been subjected to the required UV dose as specified in condition 2.3.7 (c) and (d), or of power failure causing loss of secondary treatment. Such notification must be made as soon as practicable and no later than 24 hours after the event, and shall detail the reasons why the situation occurred, and the actions taken by the operator.

4.3.8 For the activity A1 referenced in schedule 1, table S1.1 the operator shall inform the Environment Agency in writing of any change, or proposed change, to the population equivalent such as would make a material change to the application of the Regulations and shall, on request, inform the Environment Agency in writing of the actual population equivalent.

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 “as soon as reasonably practicable”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 Activities		
Activity reference	**Description of activity**	**Limits of specified activity**
A1	Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	N/A
A2	Discharge of settled storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	N/A
A3	Discharge of storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	N/A
A4	Discharge of storm sewage via Storm (High Level) Discharge Point	N/A
A5	Discharge of sewage in an emergency via EO Discharge Point	An emergency shall be defined as the period when the sewage pumping station is inoperative as a result of one or more of the following, which is not due to the act or default of the operator, its agents, representatives, officers, employees or servants; • electrical power failure; • mechanical breakdown of duty and standby pumps; • rising main failure; • blockage of the downstream sewer.

Table S1.2 Operating techniques			
Activity reference	**Description of documentation**	**Parts**	**Date Received**
A3	OT1 – Pumping station key protection measures – Colchester WRC EO – Version 1	All	21/11/2017

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP1	Submit in writing to the Environment Agency the NGR for the Event duration monitoring point as required in table S3.4 for activities A2, Discharge of settled storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point, activity A3, Discharge of storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point, activity A4, Discharge of storm sewage via Storm (High Level) Discharge Point and activity A5, Discharge of sewage in an emergency via EO Discharge Point.	30/09/2018

Schedule 2 – Waste types, raw materials and fuels

Schedule 2 not in use.

Schedule 3 – Emissions and monitoring

Table S3.1 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Effluent(s) and discharge point(s)	**Parameter**	**Limit (including unit)**	**Reference Period**	**Limit of effective range**	**Monitoring frequency**	**Compliance Statistic**
Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Dry weather flow	29,284 m^3/day	Total daily volume	N/A	Continuous	Condition 3.1.5 applies
	15-minute instantaneous or averaged flow	No limit set. Record as l/s	15 minute	N/A	Continuous	N/A
	ATU-BOD as O_2	35 mg/l	Instantaneous (spot sample)	N/A	As specified in schedule 3B	Look up table (Conditions 3.1.2 and 3.1.3 apply)
	ATU-BOD as O_2	70 mg/l	Instantaneous (spot sample)	N/A	As specified in schedule 3B	Maximum (Condition 3.1.3 applies)
	Ammoniacal nitrogen (expressed as N)	15 mg/l	Instantaneous (spot sample)	N/A	As specified in schedule 3B	Look up table (Conditions 3.1.2 and 3.1.3 apply)
	Ammoniacal nitrogen (expressed as N)	44 mg/l	Instantaneous (spot sample)	N/A	As specified in schedule 3B	Maximum (Condition 3.1.3 applies)
	Suspended solids (measured after drying at 105°C)	60 mg/l	Instantaneous (spot sample)	N/A	As specified in schedule 3B	Look up table (Conditions 3.1.2 and 3.1.3 apply)
	Visible oil or grease	No significant trace present so far as is reasonably practicable	Instantaneous (visual examination)	N/A	N/A	No significant trace (Condition 3.1.3 applies)

Table S3.1 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Effluent(s) and discharge point(s)	**Parameter**	**Limit (including unit)**	**Reference Period**	**Limit of effective range**	**Monitoring frequency**	**Compliance Statistic**
	ATU-BOD as O_2 (UWWTR)	Minimum of 70 % removal compared to influent	24 hour composite	To be compliant a sample has to meet the 70% removal standard or the 25 mg/l limit not both	As specified in schedule 3C	Look up table (Conditions 3.1.2 and 3.1.4 apply)
	ATU-BOD as O_2 (UWWTR)	25 mg/l				
	ATU-BOD as O_2 (UWWTR)	50 mg/l	24 hour composite	This limit does not apply if a sample has met the 70% removal standard	As specified in schedule 3C	Maximum (Condition 3.1.4 applies)
	COD as O_2 (UWWTR)	Minimum of 75 % removal compared to influent	24 hour composite	To be compliant a sample has to meet the 75% removal standard or the 125 mg/l limit not both	As specified in schedule 3C	Look up table (Conditions 3.1.2 and 3.1.4 apply)
	COD as O_2 (UWWTR)	125 mg/l				
	COD as O_2 (UWWTR)	250 mg/l	24 hour composite	This limit does not apply if a sample has met the 75% removal standard	As specified in schedule 3C	Maximum (Condition 3.1.4 applies)
A2 Settled storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Settled storm sewage discharge event duration monitoring (discharge / no discharge)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A
	Settled storm sewage discharge start and end times	N/A	N/A	Condition 3.3.3 does not apply	Whenever a discharge occurs	N/A
	Settled storm sewage discharge event duration monitoring status (operational / not operational)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A

Table S3.1 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Effluent(s) and discharge point(s)	**Parameter**	**Limit (including unit)**	**Reference Period**	**Limit of effective range**	**Monitoring frequency**	**Compliance Statistic**
A3 Storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Storm sewage discharge event duration monitoring (discharge / no discharge)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A
	Storm sewage discharge start and end times	N/A	N/A	Condition 3.3.3 does not apply	Whenever a discharge occurs	N/A
	Storm sewage discharge event duration monitoring status (operational / not operational)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A
A4 Storm sewage via Storm (High Level) Discharge Point	Storm sewage discharge event duration monitoring (discharge / no discharge)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A
	Storm sewage discharge start and end times	N/A	N/A	Condition 3.3.3 does not apply	Whenever a discharge occurs	N/A
	Storm sewage discharge event duration monitoring status (operational / not operational)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A
A5 Sewage in an emergency via EO Discharge Point	Sewage in an emergency discharge event duration monitoring (discharge / no discharge)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A
	Sewage in an emergency discharge start and end times	N/A	N/A	Condition 3.3.3 does not apply	Whenever a discharge occurs	N/A
	Sewage in an emergency discharge event duration monitoring status (operational / not operational)	N/A	N/A	Condition 3.3.3 does not apply	2 minute	N/A

Table S3.2 Discharge points			
Effluent Name	**Discharge Point**	**Discharge point NGR**	**Receiving water/Environment**
A1 Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation	FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	TM 0225 2361	Colne Estuary
A2 Discharge of settled storm sewage	FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	TM 0225 2361	Colne Estuary
A3 Discharge of storm sewage	FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	TM 0225 2361	Colne Estuary
A4 Discharge of storm sewage	Storm (High Level) Discharge Point	TM 0225 2361	Colne Estuary
A5 Discharge of sewage in an emergency	EO Discharge Point	TM 0225 2361	Colne Estuary

Table S3.3a Storm sewage discharge settings					
Effluent(s) and discharge point(s)	**Description of discharge**	**Overflow setting l/s**	**Maximum size of solid matter**	**Screen aperture size**	**Minimum storage capacity m^3 (off-line)**
A2 Discharge of settled storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Settled storm sewage	884	No greater than 6 mm in more than 1 dimension	6 mm x 6 mm	6,300
A3 Discharge of storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Storm sewage	2,115 (at the low level inlet works)	No greater than 6 mm in more than 1 dimension	6 mm x 6 mm	N/A
A4 Discharge of storm sewage via Storm (High Level) Discharge Point	Storm sewage	578 (at the low level inlet works)	No greater than 6 mm in more than 1 dimension	6 mm x 6 mm	N/A

Table S3.3b UV process details and process limits						
Effluent(s) and discharge point(s)	**UV source**	**Dose type**	**Full dose mJ/cm^2 (see condition 2.3.5(b))**	**50% dose mJ/cm^2 (see condition 2.3.5(c))**	**Effective dates**	**5%ile transmittance**
A1 Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Broad spectrum medium pressure artificial UV source with at least 85% of available UV radiation emitted in the wavelength range 200 to 300nm OR UV irradiation from an artificial source with at least 85% of the available radiation emitted in the wavelength range 250 to 260 nm.	Measured applied	30	15	1st Jan - 31st Dec	45%

Table S3.4 Monitoring points			
Effluent(s) and discharge point(s)	**Monitoring type**	**Monitoring point NGR**	**Monitoring point reference**
A1 Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	UWWTR influent sampling	TM 0210 2358	UWWTR inlet sample point
	UWWTR effluent sampling	TM 0199 2340	UWWTR FE sample point
	Effluent sampling	TM 0199 2341	FE Sample Point
	MCerts flow monitoring	TM 0208 2355	Flow monitor
	Crude influent sampling	TM 0210 2358	Crude influent sample point
	Pre UV treatment monitoring	TM 0194 2344	Pre-UV Sample Point
	Post UV treatment monitoring	TM 0199 2341	Post-UV Sample Point
	UV irradiation plant inlet monitoring as specified by condition 3.3.9	TM 0199 2341	UV irradiation plant inlet monitoring
	UV irradiation channel monitoring as specified by condition 3.3.9	TM 0200 2342	UV irradiation channel monitoring
A2 Discharge of settled storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Effluent sampling	TM 0216 2361	Settled Storm Sample Point
	Event duration monitoring	As specified in table S1.3	Settled Storm EDM

Table S3.4 Monitoring points			
Effluent(s) and discharge point(s)	**Monitoring type**	**Monitoring point NGR**	**Monitoring point reference**
A3 Discharge of storm sewage via FE, Settled Storm and Storm (Combined High and Low Level) Discharge Point	Effluent sampling	TM 0213 2355	Storm (Combined High and Low Level) Sample Point
	Event duration monitoring	As specified in table S1.3	Storm (Combined High and Low Level) EDM
A4 Discharge of storm sewage via Storm (High Level) Discharge Point	Effluent sampling	TM 0188 2315,	Storm (High Level) Sample Point
	Event duration monitoring	As specified in table S1.3	Storm (High Level) EDM
A5 Discharge of sewage in an emergency via EO Discharge Point	Effluent sampling	TM 0223 2361	EO Sample Point
	Event duration monitoring	As specified in table S1.3	EO EDM

Table S3.5 UV efficacy monitoring point requirements		
Monitoring type	**Parameters**	**Monitoring frequency**
Pre UV treatment monitoring point	No monitoring	As specified for sanitary parameters in table 3B. Monitoring for all parameters in table S3.5 to coincide.
UV irradiation plant inlet monitoring point	UV transmittance at 254nm	
UV Irradiation channel monitoring points	Instantaneous flow rate Measured applied dose	
Post UV treatment monitoring point	Escherichia Coli (E.coli) Suspended solids	

Schedule 3A - Look up table

Look up table	
Number of samples taken in any period of 12 months	**Maximum number of samples permitted to exceed limit for given parameter**
4–7	1
8–16	2
17–28	3
29–40	4
41–53	5
54–67	6
68–81	7
82–95	8
96–110	9
111–125	10
126–140	11
141–155	12
156–171	13
172–187	14
188–203	15
204–219	16
220–235	17
236–251	18
252–268	19
269–284	20
285–300	21
301–317	22
318–334	23
335–350	24
351–365	25

Schedule 3B - OSM tier 3 sampling frequency

Parameter	'Normal frequency' of samples per year	Reduced Sampling frequency after 12 consecutive months of numeric permit compliance, samples per year or pro rata over the remainder of a year	On numeric limit failure return to normal frequency as soon as reasonably practicable, samples per 12 months[1]	Out of hours samples
Sanitary	24	12	24	For 24 samples 2 out of hours samples per annum
Non sanitary	12	12	12	For 12 samples 1 out of hours sample per annum

[1]For UV efficacy monitoring use sanitary frequency and increase following failure of UV requirements only.

Schedule 3C – Urban Waste Water Treatment Regulations sampling frequency

Population equivalent	Samples per year	Reduced sampling frequency after a year without an UWWTR exceedance or failure, samples per year	Following an UWWTR exceedance or failure return to the higher frequency in the year that follows, samples per year
2,000 to 9,999	12	4	12
10,000 to 49,999	12	N/A	N/A
50,000 or over	24	N/A	N/A

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	**Monitoring point reference**	**Reporting period**	**Period begins**
Dry Weather Flow (daily flows total)	Flow monitor	Annually Report to be submitted within 2 months of the end of the calendar year	1 January
15-minute flow	Flow monitor	Reports to be provided to the Environment Agency upon request Report to be submitted within 28 days unless otherwise specified in writing by the Environment Agency	Upon request by the Environment Agency
UWWTR - ATU-BOD as O_2, COD as O_2	UWWTR inlet sample point UWWTR FE sample point	Monthly Report to be submitted within 28 days	1st of month
Operator Self Monitoring - ATU-BOD as O_2, ammoniacal nitrogen (expressed as N), suspended solids (measured after drying at 105^{o}C)	FE Sample Point	Quarterly Report to be submitted within 28 days	1st of month
Operator Self Monitoring summary report	FE Sample Point	Annually Report to be submitted within 2 months of the end of the calendar year	1 January
UV disinfection measurements specified by condition 3.3.9		Monthly	1st of month
Settled storm sewage discharge start and end times	Settled Storm EDM	Reports to be provided to the Environment Agency upon request Report to be submitted within 28 days unless otherwise specified in writing by the Environment Agency	Upon request by the Environment Agency
Settled storm sewage discharge start and end times	Settled Storm EDM	Annually Report to be submitted within 2 months	1 January
Settled storm sewage discharge event duration monitoring status (operational / not operational)	Settled Storm EDM	Annually Report to be submitted within 2 months	1 January

Table S4.1 Reporting of monitoring data			
Parameter	**Monitoring point reference**	**Reporting period**	**Period begins**
Storm sewage discharge start and end times	Storm (Combined High and Low Level) EDM and Storm (High Level) EDM	Reports to be provided to the Environment Agency upon request Report to be submitted within 28 days unless otherwise specified in writing by the Environment Agency	Upon request by the Environment Agency
Storm sewage discharge start and end times	Storm (Combined High and Low Level) EDM and Storm (High Level) EDM	Annually Report to be submitted within 2 months	1 January
Storm sewage discharge event duration monitoring status (operational / not operational)	Storm (Combined High and Low Level) EDM and Storm (High Level) EDM	Annually Report to be submitted within 2 months	1 January
Sewage in an emergency discharge start and end times	EO EDM	Reports to be provided to the Environment Agency upon request Report to be submitted within 28 days unless otherwise specified in writing by the Environment Agency	Upon request by the Environment Agency
Sewage in an emergency discharge start and end times	EO EDM	Annually Report to be submitted within 2 months	1 January
Sewage in an emergency discharge event duration monitoring status (operational / not operational)	EO EDM	Annually Report to be submitted within 2 months	1 January

Table S4.2 Reporting forms	
Parameter	**Reporting format**
Dry Weather Flow (daily flows total)	WISKI electronic format specified by the Environment Agency
15-minute flow	WISKI electronic format specified by the Environment Agency
UWWTR – ATU-BOD as O_2, COD as O_2	Electronic format specified by the Environment Agency
OSM - ATU-BOD as O_2, ammoniacal nitrogen (expressed as N), suspended solids (measured after drying at 105^{o}C)	Quarterly - Electronic format specified by the Environment Agency
Operator Self Monitoring summary report	Annually - Summary report of compliance with the monitoring programme specified in Table S3.1 and schedule 3B in a format specified by the Environment Agency
Settled storm sewage discharge start and end times	Form as agreed in writing by the Environment Agency
Settled storm sewage discharge start and end times	Annual summary report or other form as agreed in writing by the Environment Agency Number of and total duration of counted spills for all spills.
Settled storm sewage discharge event duration monitoring status (operational / not operational)	Annual summary report or other form as agreed in writing by the Environment Agency Percentage of time in the reporting period that the event duration monitoring equipment was operational.
Storm sewage discharge start and end times	Form as agreed in writing by the Environment Agency
Storm sewage discharge start and end times	Annual summary report or other form as agreed in writing by the Environment Agency Number of and total duration of counted spills for all spills.
Storm sewage discharge event duration monitoring status (operational / not operational)	Annual summary report or other form as agreed in writing by the Environment Agency Percentage of time in the reporting period that the event duration monitoring equipment was operational.
Sewage in an emergency discharge start and end times	Form as agreed in writing by the Environment Agency
Sewage in an emergency discharge start and end times	Annual summary report or other form as agreed in writing by the Environment Agency Number of and total duration of counted spills for all spills.
Sewage in an emergency discharge event duration monitoring status (operational / not operational)	Annual summary report or other form as agreed in writing by the Environment Agency Percentage of time in the reporting period that the event duration monitoring equipment was operational.

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 unless otherwise agreed in writing by the Environment Agency	
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/type or nature of sewage released	
Best estimate of the quantity or rate of release of substances and/or duration of discharge	
Best estimate of the environmental impact of the discharge	
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 specified in schedule 3 table S3.1 (including individual exceedances of limits which are covered by condition 3.1.2)	
The information specified below is to be notified to the Environment Agency as soon as reasonably practicable following detection.	
Monitoring point reference/ source	
Self monitoring regime (where relevant)	e.g. OSM/UWWTR
Type of failure	e.g. LUT failure/LUT exceedance/upper tier/other
Date of sample/event	
Parameter	
Result and units	
Limit and units	

Part B – to be submitted as soon as reasonably practicable unless otherwise agreed in writing by the Environment Agency

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/breach/exceedance	
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	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“abnormal operating conditions” include but are not limited to, the circumstances described in Regulation 40(1) of, or paragraph 6(5) of Schedule 21 to, the Environmental Permitting Regulations 2016 (illegal discharge to sewer), unusual weather, or during a defined period where the permit authorising the permitted activity has been varied for reasons such as capital works construction.

“accident” means an accident that may result in pollution.

"annually" means once every year.

“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.

For the activity A1 referenced in schedule 1, table S1.1 “appropriate measures” for the purposes of the emission of substances not controlled by emission limits condition (condition 3.2.1) do not require the operator to undertake treatment to a level beyond that specified in schedule 1 table S1.1, or to carry out routine monitoring for substances not controlled by emission limits.

“ATU-BOD as O_2” means the biochemical oxygen demand (measured after 5 days at 20^{o}C with nitrification suppressed by the addition of allylthiourea).

“COD as O_2” means the chemical oxygen demand (measured using the standard dichromate procedure).

“disinfection” means the use of a process designed specifically to reduce the number of viable, potentially infectious micro organisms in the effluent.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the permitted activities, which are not controlled by an emission limit.

“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.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“minimum screen capacity flow” means the minimum flow passed through the screens to the outfall when the screen bypass operates.

“monitoring frequency” as used in Table S3.1 in the context of Event Duration Monitoring is the temporal interval at which a change of state between no discharge and discharge is to be detected.

“overflow” for the purposes of schedule 7, means any weir or orifice or other means via which flow in excess of its overflow setting is diverted from the continuation sewer when it is caused by rainfall and or snowmelt.

“overflow setting” means the minimum flow passed forward to the continuation flow when the overflow operates.

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

“significant pollution” means a category 1 or category 2 incident indicated by the Common Incident Classification Scheme (CICS).

“spill” one or more overflow events within a period of 12 hours or less will be considered to be one spill, one or more overflow events extending over a period of greater than 12 hours up to 36 hours will be considered to be 2 spills. Each subsequent 24 hour duration counts as 1 additional spill and the whole of the 24 hour block is included.

“unusual weather conditions” includes, but is not limited to:

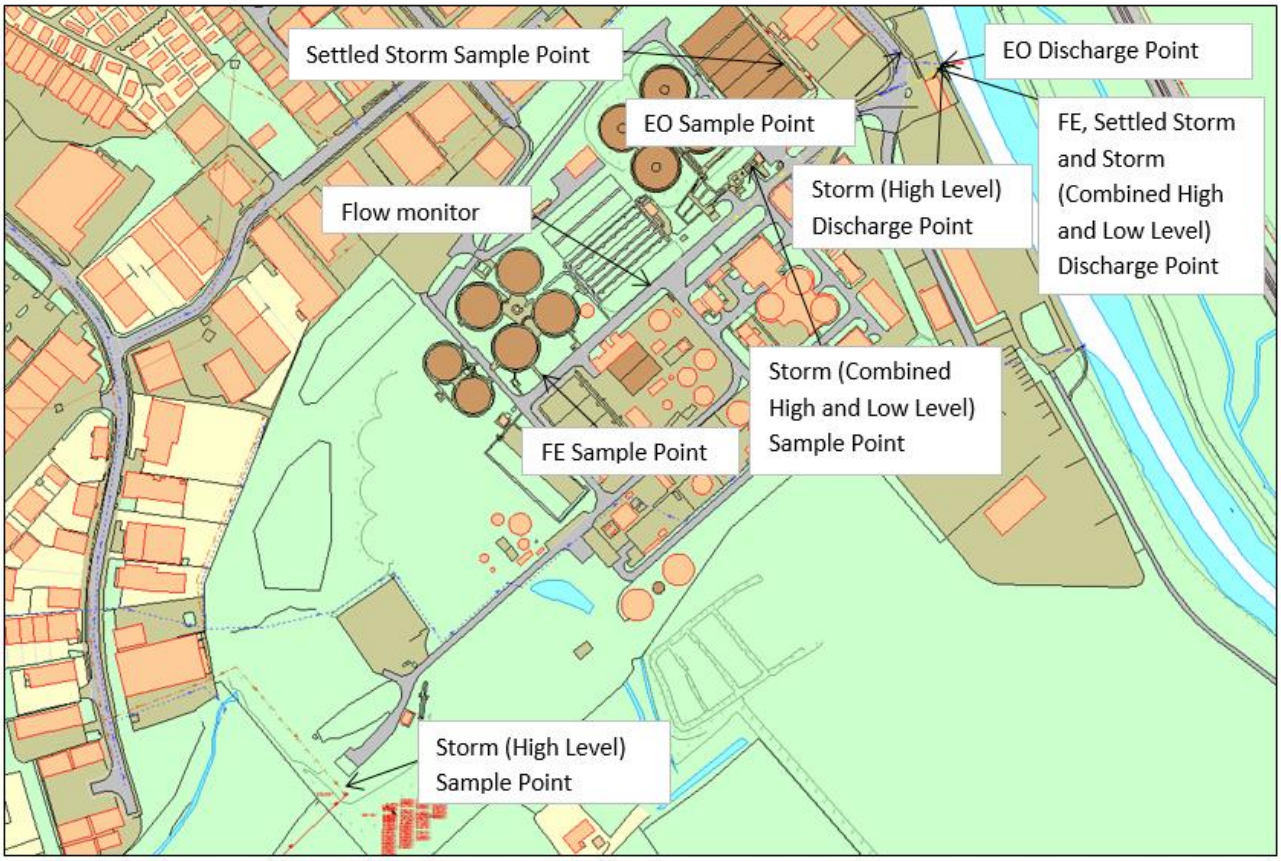
- low ambient temperatures, or the freezing of mechanical equipment in the works;
- significant snow deposits;
- tidal or fluvial flooding;
- weather conditions causing unforeseen loss of power supply to the sewage treatment that could not be ameliorated by the reasonable provision and operation of standby generation facilities.

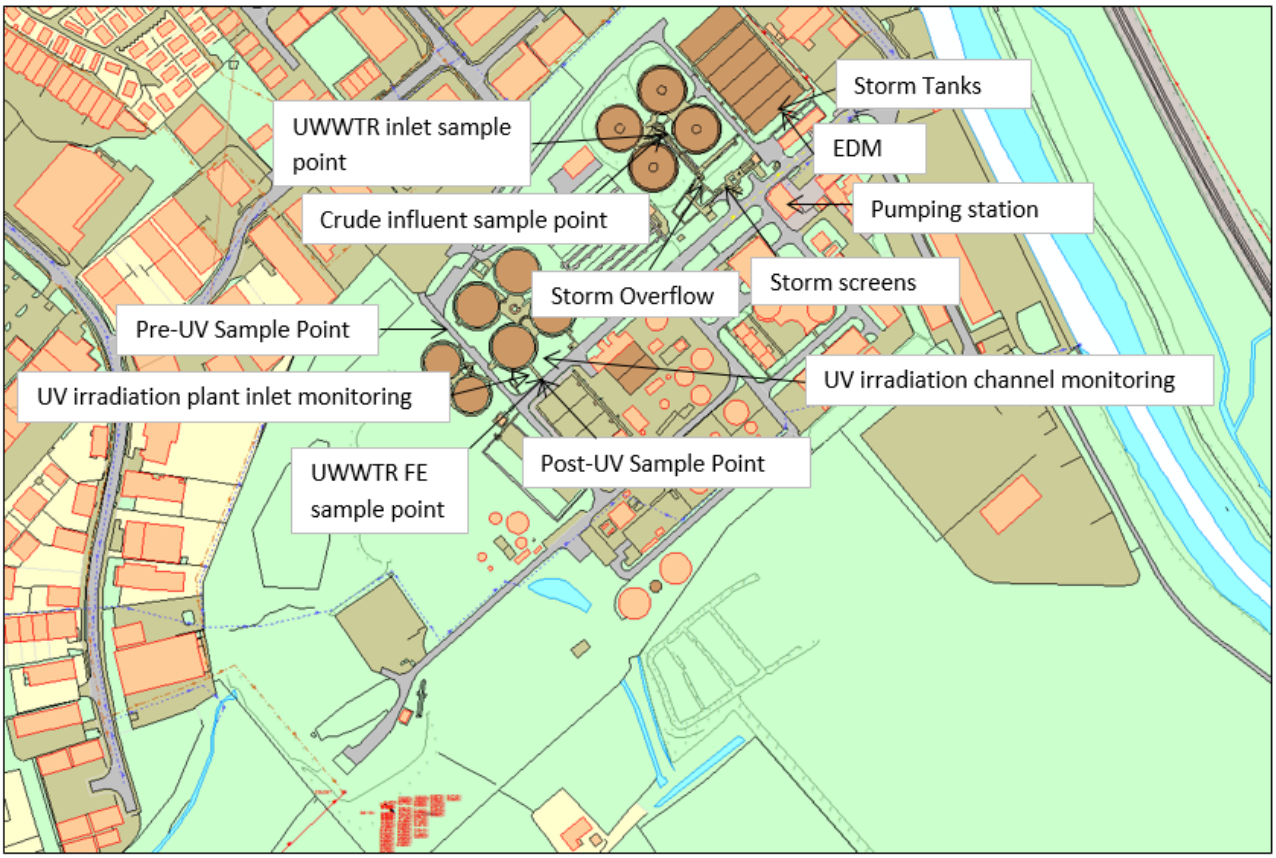
“Urban Waste Water Treatment (England and Wales) Regulations 1994 (UWWTR)” means Urban Waste Water Treatment (England and Wales) Regulations 1994 SI 2841and the words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“year” means calendar year ending 31 December.

Schedule 7 – Site Plans

Colchester WRC





END OF PERMIT