



Variation notice with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Davyhulme Wastewater Treatment
Works

United Utilities Water Plc
Rivers Lane
Urmston
Manchester
Lancashire
M41 7JB

Variation notice number
EPR/HP3931LJ/V005

Permit number
EPR/HP3931LJ

Davyhulme Wastewater Treatment Works

Permit number EPR/HP3931LJ

Introductory note

This introductory note does not form a part of the permit

The following notice, which is issued pursuant to regulation 20 and Part 1 of Schedule 5 of the Environmental Permitting (England and Wales) Regulations 2010 S.I.2010 No. 675 (the Regulations), gives notice of the variation of an environmental permit to operate a regulated facility.

This is a substantial variation which brings about a number of changes including an extension to the permitted area. The site is to undergo a significant upgrade which includes,

- *Addition of a new built multi-stream thermal hydrolysis (TH) digestion pre-treatment plant and associated infrastructure*
- *Addition of a second new-build Siloxane Removal System (SRS) and the relocation of the existing SRS including fitment of a vent air burner (VAB).*
- *Relocation of a Combustion Area. This is to include the relocation of 3 existing Jenbacher Combined Heat and Power engines (CHP); removal of other existing CHPs and removal of existing boiler plant; together with the addition of 2 in number CHPs and 3 new composite boilers for the purpose of steam generation.*
- *Addition of a new built sludge cake import and handling facility*
- *Addition of a new built cake export and handling facility*
- *Addition of two new built gasholders and demolition of the existing gasholder.*
- *Construction of a new secondary fuel storage tank*
- *Removal of the existing flare stack and its replace with two new units*
- *Change of use for some sludge storage assets*
- *The correction of a number of minor errors in the current permit.*

These changes will allow United Utilities Water to meet increasing demand for sludge treatment whilst maximising renewable energy recovery and process efficiency.

Schedule A of this notice lists any deleted conditions, Schedule B lists any amended conditions, Schedule C lists any conditions that have been added and Schedule D shows any changes to the plan.

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

Status Log of the permit

Detail	Date	Response Date
Application SP3931LL (EPR/SP3931LJ/A001)	Duly made 30/06/06	
Request for further information	23/08/06 08/09/06 28/09/06 29/09/06 06/10/06 19/10/06 19/10/06 27/10/06 07/11/06 18/12/06 17/08/07 04/09/07	22/09/06, 29/09/07 23/10/06 22/09/06, 29/09/06 25/10/06 16/10/06 25/10/06 26/10/06 06/12/06 23/11/06, 11/12/06 02/01/07 31/08/07 15/10/07
Additional information received	09/02/07	
Additional information received	30/04/07	
Additional information received	29/05/07	
Additional information received	28/08/07	
Additional information received	15/10/07	
Permit HP3931LJ determined (EPR/HP3931LJ)	24/10/07	
Application for Variation LP3839GF	Duly made 19/11/08	
Additional information received	Notice served 03/12/08	29/12/08
Variation EPR/HP3931LJ/V002	Issued 26/02/09	
Application for variation EPR/SP3931LJ/V003	Duly made 11/03/09	
Request for further information via e- mail	12/05/09	21/05/09, 25/08/09
Variation notice EPR/HP3931LJ/V003 issued	15/10/09	
Variation application EPR/HP3931LJ/V004	31/12/09	
Additional information	29/04/10	28/05/10
Variation notice EPR/HP3931LJ/V004 issued	02/07/10	
Variation notice EPR/HP3931LJ/V005	Duly Made 02/11/10	
Further information Schedule 5	17/02/11	25/03/11
Additional information received	01/12/11 Document No 16666-51-A- 00000-22 166661-88-A- 00002-20 166661-51-A- 00000-29	
Variation notice issued	01/03/12	

Other Part A installation permits relating to this installation

Operator	Permit Number	Date of Issue
United Utilities Industries Ltd	EP3031LB	24/10/07

End of Introductory Note

Notice of variation

Environmental Permitting
(England and Wales) Regulations 2010

Permit number
EPR/HP3931LJ

The Environment Agency in exercise of its powers under Regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No 675) varies the permit as set out below.

United Utilities Water Plc (“the operator”),

whose registered office is
United Utilities Water Plc
Haweswater House
Lingley Mere Business Park
Lingley Green Avenue
Great Sankey
Warrington
WA5 3LP

company registration number 2366678

holds a permit to operate a regulated facility at
Davyhulme Wastewater Treatment Works
Rivers Lane
Manchester
Lancashire
M41 7JB

and that permit is varied to the extent set out in Schedules 1 to 4 of this notice.

The notice shall take effect from 01/03/12

Name	Date
Andrew Turner	01/03/2012

Authorised on behalf of the Environment Agency

Schedule A – conditions to be deleted

In the table below (Table S4.1) the following conditions are to be deleted.

1. Emission points A1, A5, A6, A7, A8, A9, A10 and A19 and all their associated monitoring requirements and emission limit values are deleted from Table S4.1 in Schedule 4, as follows:

Table S4.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method (see Note 1)
A1 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Bio-gas engine located in the engine house	No limit set	Hourly average	Annually	BS EN 14792
A1 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Carbon Monoxide	Bio-gas engine located in the engine house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 15058
A1 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Total VOC's	Bio-gas engine located in the engine house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 12619 or BS EN 13526 dependant upon concentration
A1 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	NMVOC's	Bio-gas engine located in the engine house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 13649:2002
A5 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually	BS EN 14792
A5 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Carbon Monoxide	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually	BS EN 15058

A5 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Total VOC's	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 12619 or BS EN 13526 dependant upon concentration
A5 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	NMVOC's	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 13649:2002
A6 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually	BS EN 14792
A6 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Carbon Monoxide	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 13284-1:2002
A6 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	Total VOC's	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 12619 or BS EN 13526 dependant upon concentration
A6 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	NMVOC's	Dual fuel boiler located in the boiler house	No limit set	Hourly average	Annually (unless otherwise agreed in writing by the Agency)	BS EN 13649:2002
A7 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	No parameters set	Domestic dual fuel boiler, boiler house	No limit set	-	-	-

A8 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	No parameters set	Domestic dual fuel boiler, pump house	No limit set	-	-	-
A9 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	No parameters set	Domestic dual fuel boiler, admin building	No limit set	-	-	-
A10 as detailed on Figure 6 of the application, issue C (dated 08/01/07)	No parameters set	Flare Stack	No limit set	-	-	-
A19 as detailed on figure 6 of the application, issue C (dated 08/01/07)	No parameters set	Pressure relief valve on gas holder	No limit set	-	-	-

Schedule B – conditions to be amended

1. The following conditions in Table S1.1 activities are to be amended as a result of the application made by the operator

Table S1.1 activities

Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity and WFD Annex IIA and IIB operations	Limits of specified activity and waste types
S5.3 A1 (c)(i)	D8: Biological treatment (anaerobic Digestion) of sludge for the purposes of disposal.	From receipt of the waste to the transfer to storage, including the digestion of the waste which is limited to the following plant:- 8 Primary digesters; 14 secondary digesters; Waste types and quantities specified in Table S3.3
S5.3 A1 (c)(ii)	D9: Physical and chemical treatment of sludge for the purposes of disposal	From receipt of the waste to the transfer to storage including treatment of the waste which is limited to the following plant:- 2 Sludge Strain Presses; 3 Gravity Belt Thickeners; 1 Centrifuge (for contingency purposes only) Waste types and quantities specified in Table S3.3
S1.1 A1 (b)(iii)	The combustion of fuel (biogas) for the purpose of generating electricity and heat for use within the installation.	From receipt and storage of Biogas to the delivery of heat to the digesters and electricity to the Wastewater Treatment Works and National Grid. The combustion units are limited to CHP plant and 3 dual fuel boilers (including 1 domestic boiler) with a combined thermal input (gross) of approximately 9 MW.
Directly Associated Activity		
Combustion of standby gas oil	Burning of gas oil (standby fuel) for use in the dual fuel boilers	From receipt of gas oil, combustion of fuel and delivery of heat to the digesters. Gas oil is only to be used where there is either <ul style="list-style-type: none"> insufficient biogas available for use; poor quality biogas being produced; or operational malfunction which prevents biogas usage
Gas Flare	Flaring of excess bio-gas	From receipt of the gas at the flare. To the combustion of the gas. Biogas is only to be flared where it cannot be beneficially used for the production of heat and energy.
Storage of waste	Storage of waste prior to and after treatment	Storage of sludge prior to and after treatment. Waste types and quantities specified in Table S3.2.
Raw material storage	Storage of raw materials	From receipt of raw materials to dispatch for use
Use of centrifuge	Centrifugation of sludge	Centrifugation of sludge for the purpose of recovery
Re-liquidification Trial	Re-liquidification of imported sludge cake for enhancement of methane generation within the primary generators	Limited trial period

1. Table S1.1 activities in Schedule 1 shall be amended by the addition of the following activities :

Table S1.1 activities

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex IIA and IIB operations	Limits of specified activity and waste types
A1	S5.3 Part A (1) (c) (ii)	D9: Physical and chemical treatment of sludge for the purpose of disposal	From receipt of the waste to the transfer to storage including treatment of the waste which is limited to the following plant:- 5 Sludge Strain Presses; 4 Gravity Belt Thickeners; 3 Sludge Screening; 6 Sludge Dewatering (centrifuges); DAF Plant Thermal Hydrolysis (4 no. pulper vessels, 20 no. reactor vessels, 4 no. flash tanks)
A2	S5.3 Part A (1) (c) (i)	D8: Biological treatment (anaerobic digestion) of sludge for the purpose of disposal	From receipt of the waste to the transfer to storage, including the digestion of the waste which is limited to the following plant:- 8 Primary digesters; 12 Secondary digesters Waste types and quantities as specified in Table S3.3

A3	S1.1 A1 (b) (iii)	The combustion of fuel (biogas) for the purpose of generating electricity and heat for use within the installation	From the receipt and storage of Biogas to the delivery of heat to the digesters and electricity to the Wastewater Treatment Works and National Grid. The combustion units are limited to 5 CHP engines and 3 dual fuel boilers with a combined thermal input (gross) of approximately 45MW. The combined number of engines/boilers running at any one time are limited to the assessment scenario of 4 gas engines and one boiler (or equivalent thereof) and therefore cannot produce more than 4.815grams/second NO ₂ (ref Table 2.4 Air Modelling Report November 2011)
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Directly Associated Activity			
	Siloxane unit	Siloxane removal system	Filtration of siloxane compounds from biogas and associated filter regeneration
	Storage of Waste	Cake import and export handling facility	Storage of cake before and after treatment prior to dispatch off site.
	Degassing Tank	Degassing	Remove excess CO ₂ and minimise residual anaerobic activity in downstream pipes.

Combustion of standby gas oil	Burning of gas oil (standby fuel) for use in the 3 dual fuel boilers	<p>From receipt of gas oil, to combustion of fuel and delivery of heat to the digesters. Gas oil is only to be used where there is either:</p> <ul style="list-style-type: none"> • Insufficient biogas available for use • Poor quality biogas being produced; or • Operational malfunction which prevents biogas usage
Gas Flares (2 in number)	Flaring of bio-gas	<p>From receipt of gas at flare, to combustion of gas and discharge of combustion products. Biogas only to be flared where it is unable to be used for the production of heat and energy.</p>

2: Table S1.2 Operating Techniques of Schedule 1 shall be amended by the addition of three extra rows at the end of the table :

Table S1.2 Operating techniques

Application	The response to section 2.1, excluding 2.1.3 and 2.1.5, and 2.2 in the Application but excluding 2.1.2, 2.1.18, 2.2.10, 2.2.12, 2.2.13-2.2.15, 2.2.24, 2.2.27-2.2.37, 2.10.22 and 2.10.28	30/06/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 22/09/06. RE: Agency letter dated 23/08/06	Answers 1,2, 3, 5, 6, 10, 11 and 12	26/09/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 22/09/06. RE: Agency letter dated 08/09/06	Answers 7, 8, 13 and Davyhulme answers 1, 2, 3 and 4	26/09/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 29 September 2006	Answers for Davyhulme only 1, 2, 3, 4, 5 and 6	29/09/06
Email from Amanda Molyneux dated 29/09/09	Response for Davyhulme only	29/09/09
Letter from Amanda Molyneux of United Utilities Water PLC dated 28 September 2006	Answers to Davyhulme only	26/10/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 16 October 2006	Answers 1 and 3 only	16/10/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 25 October 2006	Responses to parts 1-8 and the response to Davyhulme only	25/10/06
Email from Amanda Molyneux of United Utilities Water PLC dated 26 October 2006	All	26/10/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 24 November 2006	All	24/11/06
Letter from Amanda Molyneux of United Utilities Water PLC dated 6 December 2006	Actions 1-3, 5 and 7 for Davyhulme only	06/12/06
Email from Amanda Molyneux of United Utilities Water PLC dated 11 December 2006	Answers for Davyhulme only	11/12/06
Email from Amanda Molyneux of United Utilities Water PLC dated 02 January 2007	Answers relating to Davyhulme only	02/01/07
Variation Application	All of section B2 in variation application – techniques	17/11/08
Response to notice requesting further information dated 23.12.08	All parts	29/12/08
Response to e mail 13.1.09	All parts	29/01/09
Variation application EPR/HP3931LJ/v003	All of Part C variation application	11/03/09
Request for additional information – email to Lynda Fellows on the 12/05/09	All	21/05/09 & 25/08/09
Variation application EPR/HP3931LJ/v004	All of Part C variation application	31/12/09
Additional information Requested 29/4/2010	All	28/05/10

Application	Sections 3, 3a, and 3b of the application document in response to section 3 – operating techniques , Part C of the application form	30/06/10
Application	Odour management plan reference OMP1 in response to section 5B, Table 3 – General Requirements, Part B of the application form	30/06/10
Response to Schedule 5 Notice dated 17/02/11	All Parts	25/03/11

3. Table S4.1 Point Source Emission to Air of Schedule 4 shall be amended to include an increase in the sampling time of nitrogen oxide to 4 hourly and an increase in the trigger levels for engines A2, A3, A4 and by the addition of emission points A21 to A57 and their associated monitoring requirements and emission limit values and the amendment of O2 odour control unit referencing 'dry scrubber' as opposed to 'wet scrubber' as in the original permit:

Table S4.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method (see Note 1)
A2 CHP Engine exhaust stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Bio-gas engine	650mg/m ³	4 Hourly average*	Quarterly	BS EN 14792
A2 CHP Engine exhaust stack	CO	Bio-gas engine	1,500mg/m ³	Hourly average	Annually	BS EN 15058
A2 CHP Engine exhaust stack	Total VOC's	Bio-gas engine	1,750mg/m ³	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A2 CHP Engine exhaust stack	NM VOC	Bio-gas engine	150mg/m ³	Hourly average	Annually	BS EN 13649:2002
A3 CHP Engine exhaust stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Bio-gas engine	650mg/m ³	4 Hourly average*	Quarterly	BS EN 14792
A3 CHP Engine exhaust stack	CO	Bio-gas engine	1,500mg/m ³	Hourly average	Annually	BS EN 15058
A3 CHP Engine exhaust stack	Total VOC's	Bio-gas engine	1,750mg/m ³	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A3 CHP Engine exhaust stack	NM VOC	Bio-gas engine	150mg/m ³	Hourly average	Annually	BS EN 13649:2002
A4 CHP Engine exhaust stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Bio-gas engine	650mg/m ³	4 Hourly average*	Quarterly	BS EN 14792
A4 CHP Engine exhaust stack	CO	Bio-gas engine	1,500mg/m ³	Hourly average	Annually	BS EN 15058

A4 CHP Engine exhaust stack	Total VOC's	Bio-gas engine	1,750mg/m ³	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A4 CHP Engine exhaust stack	NM VOC	Bio-gas engine	150mg/m ³	Hourly average	Annually	BS EN 13649:2002
A21 CHP Engine exhaust stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Bio-gas engine	500mg/m ³	4 Hourly average*	Quarterly	BS EN 14792
A21 CHP Engine exhaust stack	CO	Bio-gas engine	1,400mg/m ³	Hourly average	Annually	BS EN 15058
A21 CHP Engine exhaust stack	Total VOC's	Bio-gas engine	1,000mg/m ³	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A21 CHP Engine exhaust stack	NM VOC	Bio-gas engine	75mg/m ³	Hourly average	Annually	BS EN 13649:2002
A22 CHP Engine exhaust stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Bio-gas engine	500mg/m ³	4 Hourly average*	Quarterly	BS EN 14792
A22 CHP Engine exhaust stack	CO	Bio-gas engine	1,400mg/m ³	Hourly average	Annually	BS EN 15058
A22 CHP Engine exhaust stack	Total VOC's	Bio-gas engine	1,000mg/m ³	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A22 CHP Engine exhaust stack	NM VOC	Bio-gas engine	75mg/m ³	Hourly average	Annually	BS EN 13649:2002
A23 Composite Boiler Exhaust Stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 14792

A23 Composite Boiler Exhaust Stack	CO	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 15058
A23 Composite Boiler Exhaust Stack	Total VOC	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A23 Composite Boiler Exhaust Stack	NMVOG	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 13649:2002
A24 Composite Boiler Exhaust Stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 14792
A24 Composite Boiler Exhaust Stack	CO	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 15058
A24 Composite Boiler Exhaust Stack	Total VOC	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration
A24 Composite Boiler Exhaust Stack	NMVOG	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 13649:2002
A25 Composite Boiler Exhaust Stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 14792
A25 Composite Boiler Exhaust Stack	CO	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 15058
A25 Composite Boiler Exhaust Stack	Total VOC	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 12619 or BS EN 13526 dependant upon concentration

A25 Composite Boiler Exhaust Stack	NMVOC	Dual Fuel Boiler	No limit	Hourly average	Annually	BS EN 13649:2002
A26 Siloxane Removal System Vent Air Burner Exhaust Stack	H2S	Siloxane unit	To be agreed with Agency	To be agreed with Agency	To be agreed with Agency	To be agreed with Agency
A26 Siloxane Removal System Vent Air Burner Exhaust Stack	NMVOC	Siloxane unit	To be agreed with Agency	To be agreed with Agency	To be agreed with Agency	To be agreed with Agency
A26 Siloxane Removal System Vent Air Burner Exhaust Stack	Total VOC	Siloxane unit	To be agreed with Agency	To be agreed with Agency	To be agreed with Agency	To be agreed with Agency
A27 Flare Stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)		No limit	-	-	-
A27 Flare Stack	CO		No limit	-	-	-
A27 Flare Stack	SO ₂		No limit	-	-	-
A27 Flare Stack	NMVOC		No limit	-	-	-
A27 Flare Stack	Total VOC		No limit	-	-	-
A27B Flare Stack	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)		No limit	-	-	-
A27B Flare Stack	CO		No limit	-	-	-
A27B Flare Stack	SO ₂		No limit	-	-	-
A27B Flare Stack	NMVOC		No limit	-	-	-
A27B Flare Stack	Total VOC		No limit	-	-	-
A28 Gasholder	No parameters set	PRV	No limit	-	-	-

A29 Gasholder	No parameters set	PRV	No limit	-	-	-
A30-A57 Thermal Hydrolysis vessel	No parameters set	PRV's	No limit	-	-	-
O2 – as detailed on figure 6 of the application, issue C (dated 08/04/07)	No parameters set	General odour control unit (dry scrubber)	No limit set	-	-	-

* Unless otherwise agreed in writing by the Environment Agency

4. Table S5.1 of Schedule 5, Reporting of monitoring data - shall be amended to include revised emissions to air parameters and the number of flares increased to two:

Table S5.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.6.1.	A2, A3, A4, A21, A22, A23, A24, A25, A26	Annual	01/01/08
Gas Quality (Hydrogen sulphide)	Biogas	Quarterly	01/01/08
Number of hours boilers are in operation	Not applicable	Annual	01/01/08
Volume of light fuel oil used	Not applicable	Annual	01/01/08
Number of hours CHP engines are in operation	Not applicable	Annual	01/01/08
Number of hours flares (2) in operation	Not applicable	Annual	01/01/08

5. Condition 2.2 shall be amended to:

2.2 The activities shall not extend beyond the site, being the land shown edged in green on the site plan to schedule 4 of this variation.

6. Table S3.3 of Schedule 3 shall be amended to increase the tonnage per year from 1,243,350 to 4,635,865 tonnes per year as detailed below :

Table S3.3 Permitted waste types and quantities for treatment	
Waste codes	No more than 4,635,865 tonnes per year
EWC Code	Description
19	Wastes from Waste Management Facilities, Off Site Waste Water Treatment Plants and the Preparation of Water Intended for Human Consumption and Water for Industrial Use
19 08 05	Sludge from treatment of waste water
19 02 03	Pre-mixed wastes composed only of non-hazardous waste

7. In Schedule 7 the paragraph beginning 'where a minimum limit is set' shall be amended to:

'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 the limit.

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

- (a) in relation to spark emission engines an oxygen content of 5%, dry, the concentration at a temperature of 273K and at a pressure of 101.3kPa, for liquid and gaseous fuels
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3kPa, with no correction for water vapour content.

Schedule C – conditions to be added

The following conditions as a result of the application made by the operator

Table S1.3 of Schedule 1 Improvement programme requirements to include:

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1	<p>Following final commissioning of the Thermal Hydrolysis plant, the operator shall submit to the Environment Agency a report detailing the outcome of the commissioning programme. The report shall include but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> • A revised assessment of the potential impact on the environment (using the Environment Agency H1 methodology or equivalent) based on monitoring data acquired during commissioning and optimisation; • Confirmation of the efficiency data provided in the application and supporting information; • Identification of any changes to the operating techniques provided in the application. 	28 th February 2014 or one year post completion of commissioning (whichever is the later)
2	<p>Following final commission of all the engines, the operator shall review the level of NO_x, SO₂, CO, Total VOC and non methane VOC emissions following completion of the monitoring exercise to determine actual values for the releases to air required by condition 3.6.1. The operator shall use this detailed release data to establish the impact on air quality through the use of an appropriate air dispersion model.</p> <p>The results of the review and modelling should be submitted to the Agency in a written report with an assessment of the significance of the impacts using H1 significance criteria.</p>	28 th February 2014 or six months post completion of commissioning (whichever is sooner)
3	<p>The operator shall undertake to review all options for reducing the emissions to air to at least the benchmark standards in the Agency Technical Guidance Note for combustion and the guidance for monitoring landfill gas engine emissions (LFTGN 08), and to ensure that the releases to air do not result in a significant contribution to an exceedence of an air quality standard, objective or European Union Limit Value. Where an exceedence of a European Union is predicted and the operations would provide a significant contribution to the exceedence then the review shall assess whether it is necessary to implement measures in order to ensure that the contribution is minimised.</p>	28 th February 2014 or one year post completion of commissioning (whichever is sooner)
4	<p>Following final commissioning of the plant the operator shall review the condition of all sub-surface pipe-work by conducting a drainage survey in order to demonstrate integrity of the drainage system in relation to their potential risk to cause fugitive emissions to surface and groundwaters having regards to the requirements of section 2.2.5 of the Agency guidance note IPPC S5.06 dated December 2004.</p>	28 th February 2014 or one year post completion of commissioning (whichever is the later)
5	<p>The Operator shall provide a report of the effectiveness of odour control measures which are currently in place, having regard to Part III of Defra's Code of Practice on Odour Nuisance from Sewage Treatment Plants dated 2006 and the Environment Agency Sector Guidance S5.06. This is with specific reference to the new raw cake reception, dilution and sludge transfer. A written summary of the assessment shall be submitted to the Environment Agency in writing for approval, which shall include, but not be limited to:</p> <ul style="list-style-type: none"> • A review of the adequacy of the installation Odour Management Plan in the light of the above assessment; <p>A timetable for the implementation of any improvements identified.</p>	28 th February 2014 or one year post completion of commissioning (whichever is the later)

4. Table S1.4A of Schedule 1 pre-operational conditions to include:

Table S1.4A Pre-operational measures	
Reference	Pre-operational measures
1	<p>Prior to the operation of each individual new activity included in this variation the operator shall update the accident management plan having regard to the requirements set out in Section 1 of Environment Agency Guidance - How to comply with your environmental permit.</p> <p>The documents and procedures shall be made available for inspection at the installation.</p>
2	<p>Prior to the operation of each individual new activity included in this variation the operator shall extend the Environment Management System (EMS) protocols to include the above units, having regard to the requirements set out in Section 1 of Environment Agency Guidance - How to comply with your environmental permit.</p> <p>The documents and procedures shall be made available for inspection at the installation.</p>
3	<p>At least 30 days before final commissioning of each individual new activity the operator shall submit an amendment to the existing Odour Management Plan (OMP) to cover each new activity included within this variation. The Operator shall have regard to Part III of Defra's Code of Practice on Odour Nuisance from Sewage Treatment Plants dated 2006 and the Environment Agency Sector Guidance S5.06 Guidance for the disposal and recovery of hazardous and non-hazardous waste</p> <p>The documents and procedures shall be made available for inspection at the installation.</p>
4	<p>At least 30 days before final commissioning commences of these facilities the operator shall submit a report demonstrating that the necessary infrastructure and operating procedures are in place as detailed in operator application EPR/HP3931LJ/V005 for the Installation to allow environmental compliance with the permit EPR/HP3931LJ.</p> <p>This report shall include but not be limited to:</p> <ul style="list-style-type: none"> • Cake silo discharge dust minimisation measures in place during off-loading to lorries. <p>No operations shall commence until this report has been approved by the Agency.</p>
5	<p>Prior to the operation of the proposed new raw sludge thickening and cake import facility the operator shall carry out an odour air dispersion assessment taking into account the requirement of section 2.2.6 in the Agency guidance document IPPC S5.06.</p>

1. Table S1.4B of Schedule 4 Pre-operational measures for future development

Table S1.4B Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
1	Addition of a new build Siloxane Removal System	<p>30 days prior to commissioning of the siloxane removal system the Agency will be provided with a detailed plan regarding the type of plant, equipment and design parameters (e.g. maximum daily treatment capacity). This plan must contain, but not be limited to:</p> <ul style="list-style-type: none"> • Details of chemical reactions and their reaction kinetics/energy balance • The control system as relevant to the minimisation of emissions, in particular the main reactions and their control. • Comparison with indicative BAT standards in the sector guidance note including a comparison of candidate techniques (H1). • Typical reactor conditions e.g. volume, temperature, pressures, exotherms. • Details of condensate collection and removal • Temperature of the exhaust gas from the condensate stack <p>This plan must contain dates for the implementation of individual measures.</p>
2		<p>A commissioning report for the siloxane removal plant shall be provided to the Agency to demonstrate its performance within the first three months of its operation. The report should be submitted within 6 months of its operation. This will include:</p> <ul style="list-style-type: none"> • Appropriate sampling of the emissions from the Vent Air Burner (A26) shall be undertaken (the suite of analysis should include those determinants supplied in Appendix E (dated 22nd November 2007) of the variation (EPR/HP3931LJ/V002) application as a minimum) <p>to allow the operator to carry out an environmental impact assessment of the releases to air from A26. The impact assessment shall use representative release data, obtained through the monitoring exercises, and the H1 tool, or other appropriate assessment method.</p> <ul style="list-style-type: none"> • Temperature results from the exhaust gas from the siloxane condensate stack. • Any complaints, incidents or releases. • Any breakdown, operational problems and remedial action. • Monitor condition of the engine oil to highlight contamination trends, in particular to examine concentration of siloxanes within the oil.
3		<p>14 days prior to the operation of the siloxane removal system the operator shall provide to the Agency O&M documentation showing:</p> <ul style="list-style-type: none"> • Routine monitoring procedures • Procedures for start up & shut down • Emergency procedures • Hazardous operations plan • Management of change procedure • Hazardous area classification

Schedule D – amended plan

