Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Graphite Resources (DEP) Limited

Derwenthaugh Ecoparc
Derwenthaugh Road
Blaydon
Gateshead
NE16 3BJ

Variation application number

EPR/KB3939RR/V002

Permit number

EPR/KB3939RR

Derwenthaugh Eco Parc
Permit number EPR/KB3939RR

Introductory note

This introductory note does not form a part of the notice.

Under the Environmental Permitting (England & Wales) Regulations 2010 (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. Only the variations specified in schedule 1 are subject to a right of appeal.

The site is currently permitted for a waste operation to receive mixed wastes, treat them by autoclaving and then transfer off-site. There is also a waste transfer station permitted. This variation is to add pyrolysis equipment to pyrolyse the autoclaved waste. For the purposes of IED (in particular Chapter IV) and EPR, the pyrolysis process is a waste co-incineration plant because its main purpose is to produce a gaseous product (syngas) for subsequent combustion to generate electricity. The syngas can be classed as non waste and can cause emissions no higher than from the combustion of natural gas. Therefore chapter IV of IED does not apply to the combustion of the syngas. Char combustion is subject to IED chapter IV. The purpose of the char combustion unit is to provide heat to the pyrolysers.

The pyrolysis units and thermal oxidisers are permitted together as a 5.1 Part A(1)(a) activity, and IED chapter IV limits apply to the char thermal oxidisers. The varied permit also includes the existing waste operations for the waste treatment by autoclaving for subsequent transfer off site for recovery and for the waste transfer station.

Brief description of process

Wastes are received into a storage bay in the waste reception building. The waste is loaded into a hydraulic hopper and lift transfer system for delivery into the autoclaves. Wastes destined for direct pyrolysis will be shredded and blended within the building.

The three existing autoclaves are sealed immediately after loading. The units are rotated and steam is added. Steam is provided from a gas fired boiler in the existing system. Steam will be provided from a heat recovery system connected to the pyrolysis units, once the pyrolysis units are in operation.

Once the autoclaving is complete the units are depressurised. The exhaust steam is condensed as waste heat following recovery within a heat exchanger. The condensate is treated through the water treatment plant and discharged to sewer. Once the steam is exhausted the autoclave doors are opened and the waste removed. Hoods above the autoclaves vent to a scrubbing system to control odour.

The waste is transported to the recovery area. Recyclable materials are removed using process separation, a trommel including a star screen, ferrous magnet, eddy current separator and plastic separation by picking.

After sorting, the waste will be shredded and dried to a moisture content of ~10% to make it suitable for pyrolysis. Waste heat from the pyrolysis units will be used to dry the waste. The

autoclaved waste will be blended with other wastes before delivery to a supply hopper for the pyrolysis units.

The two pyrolysis units will be a rotary kiln type. A feed system will compact the waste to remove oxygen and then feed into the pyrolysis units through a hopper. The units will have rotating chambers and will operate at about 700^{o}C. The waste will be thermally decomposed and form a gas (syngas) and leave a residue (char).

The syngas will be cleaned using a wet scrubbing system that will consist of a quench, washtower, absorption tower, separation tank, centrifuge and carbon filter. The syngas will be cleaned to the extent where it will no longer be considered a waste and that it can cause emissions no higher than those resulting from the burning of natural gas. The char is collected and burned in one of two thermal oxidisers to provide heat to the pyrolysis units. The thermal oxidisers will achieve 1100^{o}C for 2 seconds. A heat recovery steam generator will recover heat for use in the waste feed dryer and to supply steam to the autoclaves.

Four gas engines (thermal input of ~ 19.5MW) will be used to burn the syngas to generate ~8MW of electricity. The combustion of the syngas will not be subject to IED chapter IV limits as specified in IED article 42, paragraph 1. The gas engines will emit from emission points A4-A6. A flare (emission point A3) will be available for emergency use and for start-up and shut-down.

Ceramic filters will be used to remove particulate matter from the thermal oxidiser exhaust gases. Acid gases will be removed using lime injection. Emissions will be subject to IED chapter IV requirements. The oxidisers will emit from emission points A1 and A2.

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

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/DP3692LD/A001	Duly made 20/11/2008	
Revised odour management plan received	12/01/2009	
Permit determined	24/07/09	
Transfer application EPR/KB3939RR/T001	Duly made 28/09/2012	Application for full transfer to Graphite Resources (DEP) Limited
Transfer determined EPR/KB3939RR/T001	04/10/2012	Full transfer issued
Variation application EPR/KB3939RR/V002	Duly made 03/06/2014	Application to add pyrolysis plant
Schedule 5 notice dated 01/08/14	Response received 09/09/14	
Schedule 5 notice dated 14/10/14	Response received 12/11/14	
Schedule 5 notice dated 06/03/15	Response received 04/05/15 and 08/05/15	

Status log of the permit		
Description	**Date**	**Comments**
Schedule 5 notice dated 02/06/15	Response received 10/07/15	
Variation determined (EPR/KB3939RR/V002)	15/09/15	Varied and consolidated permit issued

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

permit number
EPR/KB3939RR

issued to
Graphite Resources (DEP) Limited ("the operator")

whose registered office is

Derwenthaugh Eco Parc
Derwenthaugh Road
Swalwell
Newcastle Upon Tyne
NE16 3BJ

company registration number **06441379**

to operate a regulated facility at

Derwenthaugh Ecoparc
Derwenthaugh Road
Blaydon
Gateshead
NE16 3BJ

to the extent set out in the schedules.

The notice shall take effect from 15/09/15

Name	Date
Peter Kelly	**15/09/15**

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit ERP/KB3939RR as a result of the application made by the operator.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/KB3939RR

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/KB3939RR/V002 authorising,

Graphite Resources (DEP) Limited("the operator"),

whose registered office is

Derwenthaugh Eco Parc
Derwenthaugh Road
Swalwell
Newcastle Upon Tyne
NE16 3BJ

company registration number **06441379**

to operate a regulated facility at

Derwenthaugh Ecoparc
Derwenthaugh Road
Blaydon
Gateshead
NE16 3BJ

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

Name	Date
Peter Kelly	**15/09/15**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.1.4 The operator shall comply with the requirements of an approved competence scheme or other approval issued by the Environment Agency.

1.2 Energy efficiency

1.2.1 For the activities A1 to A4 referenced in schedule 1, table S1.1 the operator shall:

(a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and energy is used efficiently in the activities.

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

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

1.2.2 The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.

1.2.3 The operator shall review the practicability of Combined Heat and Power (CHP) implementation at least every 2 years. The results shall be reported to the Agency within 2 months of each review.

1.3 Efficient use of raw materials

1.3.1 For the activities A1 to A4 referenced in schedule 1, table S1.1 the operator shall::

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

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

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

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

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

1.4.1 The operator shall take appropriate measures to ensure that:

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

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

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

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

2 Operations

2.1 Permitted activities

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

2.1.2 Waste authorised by this permit in condition 2.3.3 shall be clearly distinguished from any other waste on the site.

2.2 The site

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

2.3 Operating techniques

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

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

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

2.3.3 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2 tables S2.2, S2.3 and S2.4; and

(b) it conforms to the description in the documentation supplied by the producer and holder.

(c) it having been separately collected for recycling, it is subsequently unsuitable for recovery.

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

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

(b) the composition of the waste;

(c) the handling requirements of the waste;

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

(e) the waste code of the waste.

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

2.3.6 The operator shall burn only those hazardous wastes where the throughputs, calorific values and pollutant compositions are within the ranges specified in table S2.5 of schedule 2.

2.3.7 The operator shall ensure that prior to accepting waste subject to condition 2.3.6 at the site, it has obtained sufficient information about the hazardous wastes to be burned to demonstrate compliance with the characteristics described in condition 2.3.6.

2.3.8 The operator shall take representative samples of all hazardous waste deliveries to the site unless otherwise agreed in writing with the Environment Agency and test a representative selection of these samples to verify conformity with the information obtained as required by condition 2.3.7. These samples shall be retained for inspection by the Environment Agency for a period of at least 1 month after the material is incinerated and results of any analysis made of such samples will be retained for at least 2 years after the material is incinerated.

2.3.9 Waste shall not be charged to the thermal oxidisers , or shall cease to be charged, if:

(a) the thermal oxidiser combustion chamber temperature is below, or falls below, 1100^{o}C; or

(b) any continuous emission limit value in schedule 3 table S3.1 is exceeded; or

(c) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than under 'abnormal operating' conditions.

2.3.10 Waste shall not be charged to the pyrolysers, or shall cease to be charged, if:

(a) any process monitoring limit in schedule 3 table S3.5 is exceeded for any two consecutive samples. The pyrolysis plant shall not be brought back into operation until the cause for the exceedence is found and rectified.

(b) Syngas is being burned in the flare except during start-up.

2.3.11 The operator shall have at least one auxiliary burner in each line at start up or shut down or whenever the operating temperature falls below that specified in condition 2.3.9, as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.9 is maintained in the combustion chamber, such burners may be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.

2.3.12 The operator shall record the beginning and end of each period of "abnormal operation".

2.3.13 During a period of "abnormal operation", the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.

2.3.14 Where, during "abnormal operation", on a co-incineration line any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:

(a) continuous emission monitor(s) are out of service for a total of 4 hours uninterrupted duration;

(b) the cumulative duration of "abnormal operation" periods over 1 calendar year has reached 60 hours.

2.3.15 The operator shall interpret the end of the period of "abnormal operation" as the earliest of the following:

(a) when the failed equipment is repaired and brought back into normal operation;

(b) when the operator initiates a shut down of the waste combustion activity, as described in the application or as agreed in writing with the Environment Agency;

(c) when a period of four hours has elapsed from the start of the "abnormal operation";

(d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached.

2.3.16 Waste char and APC residues shall not be mixed.

2.4 Improvement programme

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

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

2.5 Pre-operational conditions

2.5.1 The operations specified in schedule 1 table S1.4B shall not commence until the measures specified in that table have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

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

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

3.1.3 Wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3 table S 3.6. Additional samples shall be taken and tested and appropriate action taken, whenever:

(a) disposal or recovery routes change; or

(b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.

3.2 Emissions of substances not controlled by emission limits

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

3.2.2 The operator shall:

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

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

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

3.2.4 The Operator shall carry out monitoring of groundwater at least once every 5 years; and of soil at least once every 10 years; to the protocol agreed in writing with the Environment Agency under PO8.

3.3 Odour

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

3.4 Noise and vibration

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

3.4.2 The operator shall:

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

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

3.5 Monitoring

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

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

(b) process monitoring specified in tables S3.4 and S3.5.;

(c) residue quality in table S3.6.

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

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.

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

3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; the Continuous Emission Monitors shall be used such that;

(a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages of the emission limit value:

- Carbon monoxide 10%
- Sulphur dioxide 20%
- Oxides of nitrogen (NO & NO2 expressed as NO2) 20%
- Particulate matter 30%
- Total organic carbon (TOC) 30%
- Hydrogen chloride 40%

(b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.5.5 (a);

(c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;

(d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;

(e) no more than ten daily average values per year shall be determined not to be valid.

3.5.6 The monitoring frequency as referred to in Table S3.5 shall be:

(a) Daily. After 7 successive daily samples in which the limit is not exceeded, monitoring frequency can be carried out as specified in 3.5.6 (b).

(b) Weekly. After 4 weekly successive samples in which the limit is not exceeded, monitoring frequency can be carried out as specified in 3.5.6 (c). If a weekly sample exceeds the limit then monitoring shall be carried out as specified in 3.5.6 (a).

(c) Monthly. After 3 successive monthly samples in which the limit is not exceeded, monitoring frequency can be carried out as specified in 3.5.6 (d). If a monthly sample exceeds the limit then monitoring shall be carried out as specified in 3.5.6 (b).

(d) Quarterly. If a Quarterly sample exceeds the limit then monitoring shall be carried out as specified in 3.5.6 (c)

3.5.7 If any sample exceeds a limit in Table S3.5 then a further sample for that parameter shall be taken within 1 week or sooner if required by condition 3.5.6

3.6 Pests

3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

3.6.2 The operator shall:

(a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;

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

4 Information

4.1 Records

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

(a) be legible;

(b) be made as soon as reasonably practicable;

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

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

(i) off-site environmental effects; and

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

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

4.2 Reporting

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

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

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

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

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

(d) the functioning and monitoring of the co- incineration plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

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

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

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

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

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

4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

4.3 Notifications

4.3.1 The Operator shall

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

(i) inform the Environment Agency,

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

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

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

(i) inform the Environment Agency, and

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

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

4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

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

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

Where the operator is a registered company:

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

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

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

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

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

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

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

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

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

4.4 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 “without delay”, in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
A1	S5.1 A1 (a)	Pyrolysis of waste in a waste co-incineration plant.	From receipt of waste to transfer of syngas to gas engines and despatch of process wastes. Includes pre-treatment of waste, cleaning of syngas and treatment of syngas cleaning effluent. Waste types and quantities as specified in Table S2.3 and S2.4 of this permit. Storage of autoclaved waste in zone D as shown on diagram DRG 17,253-01 Rev 07, with maximum quantity of 1000 tonnes at any one time
A2	S5.4 A1 (a)	Treatment of waste in autoclaves for subsequent off-site incineration	From receipt of waste to despatch of autoclaved waste. Waste types and quantities as specified in Table S2.3 of this permit. Storage of autoclaved waste in zone D as shown on diagram DRG 17,253-01 Rev 07, with maximum quantity of 1000 tonnes at any one time
	Directly Associated Activities		
A3	Electricity Generation	Generation of electrical power using three gas engines with thermal input of <20MW	Combustion of syngas and biogas in up to three gas engines. Only combustion of syngas that meets the limits set in table S3.5 of this permit.
A4	Emergency flare	Combustion of syngas in emergency flare	For use during emergencies or for start-up and shut-down

	Table S1.1 activities	
	Description of activities for waste operations	**Limit of activities**
A5 Household, commercial and industrial waste transfer station	D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced) R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) R12: Exchange of wastes for submission to any of the operations R1 to R11 R3: Recycling/reclamation of organic substances which are not used as solvents R4: Recycling/reclamation of metals and metal compounds R5: Recycling/reclamation of other inorganic materials	Waste must be kept on an impermeable surface with sealed drainage. All bulking, transfer and treatment of waste must be carried out on an impermeable surface with sealed drainage Treatment consisting only of • manual sorting • separation • screening • baling • shredding • crushing • compaction of waste into different components for disposal, (no more than 50 tonnes per day) or recovery. No more than a total 50 tonnes of intact and shredded waste vehicle tyres (waste code 19 12 04) shall be stored at this site. Waste must be treated on an impermeable surface with sealed drainage. Waste types as specified in Table S2.1.
A6 Mechanical heat treatment plant	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) R3: Recycling/reclamation of organic substances which are not used as solvents R4: Recycling/reclamation of metals and metal compounds R5: Recycling/reclamation of other inorganic compounds	All waste must be stored on hardstanding or an impermeable surface with sealed drainage system. Treatment operations shall be limited to: 1. Heat treatment of waste for the purpose of disposal and recovery. 2. Physical treatment including • screening, • crushing • baling • shredding • pelletising for the purpose of recovery. All treatment of waste, including steam treatment, shall take place within a building with hardstanding or an impermeable surface with sealed drainage system Waste types as specified in Table S2.2. Storage of autoclaved waste in zone D as shown on diagram DRG 17,253-01 Rev 07, with maximum quantity of 1000 tonnes at any one time.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Operating techniques for treatment of waste using autoclaves and pyrolysis plant		
Variation application EPR/KB3939RR/V002	The response to question 3a of application form C3 Response to not duly made letter (dated 25/03/14): • question 6 Response to not duly made letter (dated 07/04/14): • Questions 1 to 5	03/06/14
Response to schedule 5 notice issued on 11/08/14	Response to questions 4, 6, 34, 36, 37, 38,	09/09/14
Response to schedule 5 notice issued on 14/10/14	Response to questions13, 15, 17, 19.	12/11/14
Response to schedule 5 notice issued on 06/03/15	Response to questions 3, 5, 6, 10, 11, 13(ii)	04/05/15
Response to schedule 5 notice issued on 02/06/15	Fire prevention plan	26/07/15
Operating techniques for waste transfer station		
Application EPR/DP3639LD/A001 transferred to the operator as EPR/KB3939RR/T001	Environmental Permit Compliance Plan November 2008 (received with application) Accident Management Plan November 2008 (received with application) Site Specific Risk Assessment November 2008 (received with application) Technical Guidance Note: Getting The Basics Right	20/11/08 20/11/08 20/11/08 -

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The Operator shall submit a written report to the Environment Agency on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Within 4 months of the completion of commissioning.
IC2	The Operator shall carry out checks to verify the residence time, minimum temperature and oxygen content of the exhaust gases in the furnace whilst operating under the anticipated most unfavourable operating conditions. The results shall be submitted in writing to the Environment Agency.	Within 4 months of the completion of commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC3	The Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values, As, and Cr(VI). A report on the assessment shall be submitted to the Environment Agency. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant EQS/EAL. In the event that the assessment shows that an EQS/EAL can be exceeded, the report shall include proposals for further investigative work.	15 months from commencement of operations
IC4	The Operator shall submit a written summary report to the Agency to confirm by the results of calibration and verification testing that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 and Table S3.1(a) complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	Initial calibration report to be submitted to the Agency within 3 months of completion of commissioning. Full summary evidence compliance report to be submitted within 18 months of commissioning.
IC5	The Operator shall carry out analysis of at least 3 samples of natural gas for the substances specified in table S3.5. The operator shall submit a written report to the Environment Agency containing the results of syngas testing carried out under condition 3.5.5 and compare this to the natural gas analysis and the limits specified in table S3.5. The report shall include but not be limited to: • A description of the waste types that were pyrolysed to generate the syngas. • Details of how the samples were taken. • Details of the methods used to analyse the samples including the limits of detection. • An description of action required if the syngas is shown to have higher pollutant levels than the natural gas samples. The report shall be submitted to the Environment Agency in writing.	Within 6 months of the start of operation
IC6	The Operator shall submit a written proposal to the Environment Agency to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission point A1, identifying the fractions within the PM10, and PM2.5 ranges. The proposal shall include a timetable for approval by the Environment Agency to carry out such tests and produce a report on the results. On receipt of written agreement by the Environment Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Environment Agency a report on the results.	Within 6 months of the completion of commissioning.

Table S1.4B Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
PO1	Operation of pyrolysis plant	Prior to the commencement of commissioning, the Operator shall send a summary of the site Environment Management System (EMS) to the Environment Agency and make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Section 1 of How to comply with your environmental permit – Getting the basics right. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.
PO2		Prior to the commencement of commissioning, the Operator shall send a report to the Environment Agency which will contain a comprehensive review of the options available for utilising the heat generated by the waste co-incineration process in order to ensure that it is recovered as far as practicable. The review shall detail any identified proposals for improving the recovery and utilisation of waste heat and shall provide a timetable for their implementation.
PO3		Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency for approval a protocol for the sampling and testing of thermal oxidiser residue for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved.
PO4		Prior to the commencement of commissioning; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
PO5		After completion of furnace design of the thermal oxidisers and at least three calendar months before any furnace operation; the operator shall submit a written report to the Environment Agency of the details of the computational fluid dynamic (CFD) modelling. The report shall demonstrate whether the design combustion conditions comply with the residence time and temperature requirements as defined by the Waste Incineration Directive.
PO6		At least three months before operation, the Operator shall submit a written report to the Environment Agency specifying arrangements for continuous and periodic monitoring of emissions to air to comply with Environment Agency guidance notes M1 and M2. The report shall include the following: Plant and equipment details, including accreditation to MCERTS Methods and standards for sampling and analysis Details of monitoring locations, access and working platforms.
PO7		Prior to the commencement of commissioning, the Operator shall submit the following details regarding the composition of blended hazardous waste that is to be charged to the pyrolyser: (i) The minimum calorific value; (ii) The maximum concentrations of; Polychlorinated biphenyls; Pentachlorophenol; and Fluorine. (vi) Confirmation of other parameters in table S2.5.
PO8		The Operator shall submit the written protocol referenced in condition 3.2.4 for the monitoring of soil and groundwater for approval by the Environment Agency. The protocol shall demonstrate how the

Table S1.4B Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
		Operator will meet the requirements of Articles 14(1)(b), 14(1)(e) and 16(2) of the IED. The procedure shall be implemented in accordance with the written approval from the Environment Agency.
PO9		Prior to the commencement of commissioning, the Operator shall send an updated Fire Prevention Plan to the Environment Agency for approval. The plan shall provide any updates made to the plan submitted with variation application EPR/KB3939RR/V002. The plan shall be in accordance with Environment Agency guidance on Fire Prevention Plans.

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
None specified	-

Table S2.2 Permitted waste types and quantities for Household, Commercial & Industrial Waste Transfer Station with treatment.	
Maximum quantity	The quantity of wastes listed below, accepted at the site shall be less than 90,000 tonnes a year.
Exclusions	Notwithstanding the specification of waste types below, wastes shall not be accepted at the site which have any of the following characteristics: • Consisting solely or mainly of dusts, powders or loose fibres • Wastes that are in a form which is either sludge or liquid
Waste code	**Description**
02	**WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**
02 01	**wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 07	wastes from forestry
02 01 10	waste metal
03	**WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD**
03 01	**wastes from wood processing and the production of panels and furniture**
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	**wastes from pulp, paper and cardboard production and processing**
03 03 01	waste bark and wood
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
07	**WASTES FROM ORGANIC CHEMICAL PROCESSES**
07 02	**wastes from the MFSU of plastics, synthetic rubber and man-made fibres**
07 02 13	waste plastic
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**packaging (including separately collected municipal packaging waste)**
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging
15 01 03	wooden packaging
15 01 04	metallic packaging
15 01 05	composite packaging
15 01 06	mixed packaging

Table S2.2 Permitted waste types and quantities for Household, Commercial & Industrial Waste Transfer Station with treatment.	
Maximum quantity	The quantity of wastes listed below, accepted at the site shall be less than 90,000 tonnes a year.
Exclusions	Notwithstanding the specification of waste types below, wastes shall not be accepted at the site which have any of the following characteristics: • Consisting solely or mainly of dusts, powders or loose fibres • Wastes that are in a form which is either sludge or liquid
Waste code	**Description**
15 01 07	glass packaging
15 01 09	textile packaging
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
17 01	**concrete, bricks, tiles and ceramics**
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	**wood, glass and plastic**
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 04	**metals (including their alloys)**
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	**insulation materials and asbestos-containing construction materials**
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 08	**gypsum-based construction material**
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	**other construction and demolition wastes**
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
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	**wastes from waste water treatment plants not otherwise specified**
19 08 01	screenings
19 09	**wastes from the preparation of water intended for human consumption or water for industrial use**
19 09 01	solid waste from primary filtration and screenings
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**

Table S2.2 Permitted waste types and quantities for Household, Commercial & Industrial Waste Transfer Station with treatment.	
Maximum quantity	The quantity of wastes listed below, accepted at the site shall be less than 90,000 tonnes a year.
Exclusions	Notwithstanding the specification of waste types below, wastes shall not be accepted at the site which have any of the following characteristics: • Consisting solely or mainly of dusts, powders or loose fibres • Wastes that are in a form which is either sludge or liquid
Waste code	**Description**
19 12 01	paper and cardboard
19 12 02	ferrous metal
19 12 03	non-ferrous metal
19 12 04	plastic and rubber
19 12 05	glass
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	textiles
19 12 09	minerals (for example sand, stones)
19 12 10	combustible waste (refuse derived fuel)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**separately collected fractions (except 15 01)**
20 01 01	paper and cardboard
20 01 02	glass
20 01 11	textiles
20 01 38	wood other than that mentioned in 20 01 37
20 01 39	plastics
20 01 40	metals
20 02	**garden and park wastes (including cemetery waste)**
20 02 01	biodegradable waste
20 02 02	soil and stones
20 02 03	other non-biodegradable wastes
20 03	**other municipal wastes**
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 07	bulky waste
20 03 99	municipal wastes not otherwise specified

Table S2.3 Permitted waste types and quantities for autoclave treatment or for autoclave treatment followed by pyrolysis	
Maximum Quantity	**320,000 tonnes per year for autoclaving** **52,800 tonnes per year of dried autoclaved waste for pyrolysis**
Exclusions	Notwithstanding the specification of waste types below, wastes shall not be accepted at the site which have any of the following characteristics: • Consisting solely or mainly of dusts, powders or loose fibres; • Drummed wastes • Animal By-Products contaminated material – unless the plant has been approved by the competent authority, which is Animal Health
Waste code	**Description**
02	**WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**
02 01	**wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 07	wastes from forestry
02 01 10	waste metal
02 02	**wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 03	**wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**
02 03 04	materials unsuitable for consumption or processing
02 05	**wastes from the dairy products industry**
02 05 01	materials unsuitable for consumption or processing
02 06	**wastes from the baking and confectionery industry**
02 06 01	materials unsuitable for consumption or processing
02 07	**wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 04	materials unsuitable for consumption or processing
03	**WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD**
03 01	**wastes from wood processing and the production of panels and furniture**
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	**wastes from pulp, paper and cardboard production and processing**
03 03 01	waste bark and wood
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
07	**WASTES FROM ORGANIC CHEMICAL PROCESSES**
07 02	**wastes from the MFSU of plastics, synthetic rubber and man-made fibres**
07 02 13	waste plastic

Table S2.3 Permitted waste types and quantities for autoclave treatment or for autoclave treatment followed by pyrolysis	
Maximum Quantity	**320,000 tonnes per year for autoclaving** **52,800 tonnes per year of dried autoclaved waste for pyrolysis**
Exclusions	Notwithstanding the specification of waste types below, wastes shall not be accepted at the site which have any of the following characteristics: • Consisting solely or mainly of dusts, powders or loose fibres; • Drummed wastes • Animal By-Products contaminated material – unless the plant has been approved by the competent authority, which is Animal Health
Waste code	**Description**
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**packaging (including separately collected municipal packaging waste)**
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging
15 01 03	wooden packaging
15 01 04	metallic packaging
15 01 05	composite packaging
15 01 06	mixed packaging
15 01 07	glass packaging
15 01 09	textile packaging
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 05	**wastes from aerobic treatment of solid wastes**
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 06	**wastes from anaerobic treatment of waste**
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 08	**wastes from waste water treatment plants not otherwise specified**
19 08 01	screenings
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 09	**wastes from the preparation of water intended for human consumption or water for industrial use**
19 09 01	solid waste from primary filtration and screenings
19 09 02	sludges from water clarification
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 01	paper and cardboard
19 12 02	ferrous metal
19 12 03	non-ferrous metal
19 12 04	plastic and rubber
19 12 05	glass
19 12 07	wood other than that mentioned in 19 12 06

Table S2.3 Permitted waste types and quantities for autoclave treatment or for autoclave treatment followed by pyrolysis	
Maximum Quantity	**320,000 tonnes per year for autoclaving** **52,800 tonnes per year of dried autoclaved waste for pyrolysis**
Exclusions	Notwithstanding the specification of waste types below, wastes shall not be accepted at the site which have any of the following characteristics: • Consisting solely or mainly of dusts, powders or loose fibres; • Drummed wastes • Animal By-Products contaminated material – unless the plant has been approved by the competent authority, which is Animal Health
Waste code	**Description**
19 12 10	combustible waste (refuse derived fuel)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**separately collected fractions (except 15 01)**
20 01 01	paper and cardboard
20 01 02	glass
20 01 08	biodegradable kitchen and canteen waste
20 01 38	wood other than that mentioned in 20 01 37
20 01 39	plastics
20 01 40	metals
20 02	**garden and park wastes (including cemetery waste)**
20 02 01	biodegradable waste
20 02 03	other non-biodegradable wastes
20 03	**other municipal wastes**
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 99	municipal wastes not otherwise specified

Table S2.4 Permitted waste types and quantities for blending and then mixing with autoclaved waste prior to pyrolysis	
Maximum quantity	**9000 tonnes of waste listed in table S2.4, 52,800 t/yr when combined with dried autoclaved waste**
Waste code	**Description**
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**packaging (including separately collected municipal packaging waste)**
15 01 10*	packaging containing residues of or contaminated by hazardous substances
15 02	**absorbents, filter materials, wiping cloths and protective clothing**
15 02 02*	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**separately collected fractions (except 15 01)**
20 01 27*	paint, inks, adhesives and resins containing hazardous substances
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27

Table S2.5 Specification for blended solid hazardous waste feedstock for mixing with autoclaved waste prior to pyrolysis	
Content/Value	**Specification**
Quantity	5000 to 7000 tonnes per year
Calorific value	Maximum of 20 MJ/kg
	Minimum to be established in accordance with pre-operational measure Table S1.4, PO9
Polychlorinated biphenyls	Maximum concentration: To be established in accordance with pre-operational measure Table S1.4, PO9.
Pentachlorophenol	Maximum concentration: To be established in accordance with pre-operational measure Table S1.4, PO9.
Chlorine	Maximum 0.25%
Fluorine	Maximum concentration: To be established in accordance with pre-operational measure Table S1.4, PO9.
Sulphur	Maximum 0.1%
Total metals	Maximum 1503 mg/kg

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location [as shown on fig 3.5 in application EPR/KB3939RR/V003]	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1, A2	Particulate matter	Thermal Oxidisers	15 mg/m^3	daily average	Continuous measurement	BS EN 14181 and BS EN 15267-3
A1, A2	Total Organic Carbon (TOC)		15 mg/m^3			
A1, A2	Hydrogen chloride		15 mg/m^3			
A1, A2	Hydrogen fluoride		3 mg/m^3	periodic over minimum 1-hour period	Quarterly in first year. Then Bi-annual	BS ISO 15713
A1, A2	Carbon monoxide		75 mg/m^3	daily average	Continuous measurement	BS EN 14181 and BS EN 15267-3
A1, A2	Sulphur dioxide		75 mg/m^3			
A1, A2	Oxides of nitrogen (NO and NO_2 expressed as NO_2)		300 mg/m^3			
A1, A2	Cadmium & thallium and their compounds (total)		0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A1, A2	Mercury and its compounds		0.05 mg/m^3			BS EN 13211
A1, A2	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)		0.5 mg/m^3			BS EN 14385
A1, A2	water vapour content		No limit set	continuous	-	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location [as shown on fig 3.5 in application EPR/KB3939RR/V003]	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1, A2	Dioxins / furans (I-TEQ)		0.01 ng/m^3	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
A1, A2	Dioxins / furans (WHO-TEQ Humans / Mammals)		No limit set			
A1, A2	Dioxins / furans (WHO-TEQ Fish)					
A1, A2	Dioxins / furans (WHO-TEQ Birds)					
A1, A2	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)					BS EN 1948-4
A1, A2	Dioxin-like PCBs (WHO-TEQ Fish)					
A1, A2	Dioxin-like PCBs (WHO-TEQ Birds)					
A1, A2	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.					Procedure shall use BS ISO 11338-1 and BS-ISO 11338-2.
A3	No parameters set	Emergency flare	No limits set	-	-	-
A4, A5, A6, A7	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Gas engines	400 mg/m^3	daily average	Continuous measurement	BS EN 14181 and BS EN 15267-3
A4, A5, A6, A7	Carbon monoxide	Gas engines	1200 mg/m3	periodic over minimum 1-hour period	Annually	BS EN 15058
A8-A11	No parameters set	Odour scrubbing towers	No limits set	-	-	-

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

Table S3.3 Point Source emissions to sewer						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
S1	No parameters set	Washdown water and autoclave condensate via effluent Water treatment plant	No limits set	-	-	-

Table S3.4 Process monitoring requirements				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Location close to the thermal oxidiser combustion chamber inner wall	Temperature (° C)	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A1, A2	Exhaust gas oxygen content	Continuous	BS EN 15267-3 BS EN 14181	-
A1, A2	Exhaust gas water vapour content	Continuous	BS EN 15267-3 BS EN 14181	Unless gas is dried before analysis of emissions.

Table S3.5 Process monitoring requirements – syngas quality				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Limit [The following calculation shall be used to show compliance with the limits in this table (syngas monitoring result / syngas calorific value) x 37]**
Syngas, post gas cleaning line and pre combustion.	Total Sulphur	As specified in condition 3.5.5	Method based on USEPA Method 8	50 mg/m^3
	Total halogenated hydrocarbons	As specified in condition 3.5.5	Method based on EN 13649	1.5 mg/m^3
	Heavy metals Cd, Tl, Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	As specified in condition 3.5.5	Impingement based on BE EN 14385	0.03 mg/m^3 (total metals)
	Hg	As specified in condition 3.5.5	Impingement based on BE EN 13211	
	Hydrogen sulphide	Quarterly	Method based on USEPA Method 11 or EN 13649 coupled with NIOSH 6013	5 mg/m^3
	Aromatic hydrocarbons (expressed as xylene)	As specified in condition 3.5.5	Semi continuous GC or DOAS	100 mg/m^3

Table S3.6 Residue quality					
Emission point reference or source or description of point of measurement	**Parameter**	**Limit**	**Monitoring frequency**	**Monitoring standard or method ***	**Other specifications**
Thermal oxidiser residue	TOC	<3%	Monthly in the first year of operation. Then Quarterly	Environment Agency ash sampling protocol.	
Thermal oxidiser residue	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.		Monthly in the first year of operation. Then Quarterly	Sampling and analysis as per Environment Agency ash sampling protocol.	
Thermal oxidiser residue	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions		Before use of a new disposal or recycling route	Sampling and analysis as per Environment Agency ash sampling protocol.	
Thermal oxidiser residue	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.		Monthly in the first year of operation. Then Quarterly	Sampling and analysis as per Environment Agency ash sampling protocol.	
Thermal oxidiser residue	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions		Before use of a new disposal or recycling route	Sampling and analysis as per Environment Agency ash sampling protocol.	

* Or other equivalent standard as agreed in writing with the Environment Agency.

Schedule 4 - Reporting

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

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1	A1, A2, A3, A4, A5, A6 , A7	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
Process monitoring requirements Parameters as required by condition 3.5.1	Syngas quality	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
TOC Parameters as required by condition 3.5.1	Residue from thermal oxidisers	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1	Residue from thermal oxidisers	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.5.1	Residue from thermal oxidisers	Before use of a new disposal or recycling route	
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1	APC Residues	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.5.1	APC Residues	Before use of a new disposal or recycling route	
Functioning and monitoring of the incineration plant as required by condition 4.2.2		Annually	1 Jan

Table S4.2: Annual production/treatment	
Parameter	**Units**
Total waste received	tonnes
Total waste gasified	tonnes
Total waste to anaerobic digestion	tonnes
Syngas produced	m^3

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Electrical energy generated and electrical energy exported	Annually	MWhr / tonne of waste gasified
Waste heat generated, exported, and used at the installation	Annually	MWhr / tonne of waste gasified
Urea consumption	Annually	Kg / tonne of waste gasified
Solid residues from thermal oxidisers	Annually	Kg / tonne of waste gasified
Digestate	Annually	Kg / tonne of waste gasified
Flare operation	Annually	Hours
Periods of abnormal operation	Quarterly	No of occasions and cumulative hours for current calendar year for each line.

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Forms air 1-8 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Raw material use	Form RM1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Waste generation	Form waste1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Residues	Form residues1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Energy	Form energy 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY

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	**EPR/KB3939RR**
Name of operator	**Graphite Resources (DEP) Limited**
Location of Facility	**Derwenthaugh Ecoparc**
Time and date of the detection	

(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
To be notified Immediately	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a permit condition	
To be notified immediately	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**
In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B - to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 - Interpretation

"abnormal operation" means any technically unavoidable stoppages, disturbances, or failures of the the measurement devices for emissions to air.

"abatement equipment" means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

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

"APC residues" means air pollution control residues

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

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

"bi-annual" means twice per year with at least five months between tests;

"waste char" means residues from pyrolysis units or from thermal oxidisers.

"CEM" Continuous emission monitor

"CEN" means Commité Européen de Normalisation

"Daily" for sampling/monitoring means once per day with at least 12 hours between samples.

"daily average" for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation.

"*dioxin and furans*" means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

"disposal". Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

"emissions to land" includes emissions to groundwater.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

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

"*end of Waste*" means syngas that is no longer considered to be a waste.

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

'Hazardous waste' has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended)

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

Where the following terms appear in the waste code list in Tables S2.2, S2.3 or S2.4X they have the meaning given below.

'*hazardous substance'* means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008

'*heavy metal'* means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, as well as these materials in metallic form, as far as these are classified as hazardous substances

'*polychlorinated biphenyls and polychlorinated terphenyls'* ('PCBs') means PCBs as defined in Article 2(a) of Council Directive 96/59/EC'.
Article 2(a) says that 'PCBs' means:

- polychlorinated biphenyls
- polychlorinated terphenyls
- monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyldibromo-diphenyl methane
- any mixture containing any of the above mentioned substances in a total of more than 0,005 %by weight

'*transition metals'* means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified as hazardous substances

'*stabilisation*' means processes which change the hazardousness of the constituents in the waste and transform hazardous waste into non-hazardous waste

'*solidification*' means processes which only change the physical state of the waste by using additives without changing the chemical properties of the waste

'*partly stabilised wastes'* means wastes containing, after the stabilisation process, hazardous constituents which have not been changed completely into non-hazardous constituents and could be released into the environment in the short, middle or long term

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

"ISO" means International Standards Organisation.

'List of Wastes' means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

"LOI" means loss on ignition a technique used to determine the combustible material by heating the ash residue to a high temperature

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

"Monthly" for sampling/monitoring means once per month with at least 2 weeks between samples.

"PAH" means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenzo[ah]anthracene, Dibenzo[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

"PCB" means *Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.*

"quarterly" for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

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

"recovery" means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

"*shut down"* is any period where the plant is being returned to a non-operational state and there is no waste being fed to the pyrolyser or agreed in writing with the Environment Agency.

"start up" is any period, where the plant has been non-operational, until waste has been fed to the pyrolyser to initiate steady-state conditions or as agreed in writing with the Environment Agency.

"TOC" means *Total Organic Carbon.* In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC. In respect of Bottom Ash, this means the total carbon content of all organic species present in the ash (excluding carbon in elemental form).

'Waste code' means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk

"Waste char" means the residue from the pyrolysis units or reside from themrmal oxidisers

"Waste Framework Directive" or "WFD" means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

"Weekly" for sampling/monitoring means once per week with at least 4 days between samples.

"year" means calendar year ending 31 December.

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

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

(a) in relation to emissions from gas engines 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 5% dry;

(b) in relation to gases from co-incineration plants the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 6% dry

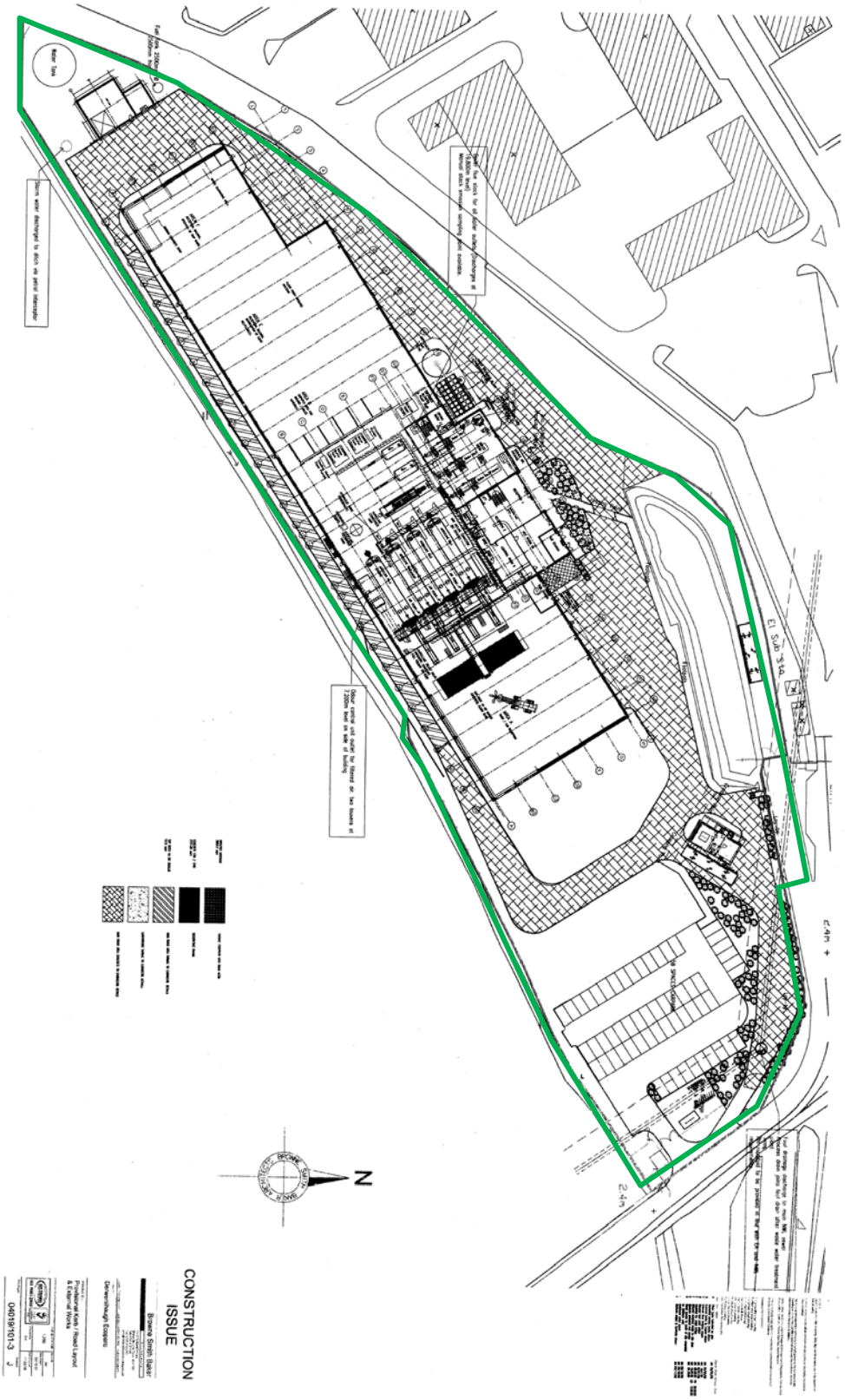
For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less then the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1.

TEF schemes for dioxins and furans				
Congener	***I-TEF***	***WHO-TEF***		
	1990	**2005**	**1997/8**	
		Humans / Mammals	***Fish***	***Birds***
Dioxins				
2,3,7,8-TCDD	*1*	*1*	*1*	*1*
1,2,3,7,8-PeCDD	*0.5*	*1*	*1*	*1*
1,2,3,4,7,8-HxCDD	*0.1*	*0.1*	*0.5*	*0.05*
1,2,3,6,7,8-HxCDD	*0.1*	*0.1*	*0.01*	*0.01*
1,2,3,7,8,9-HxCDD	*0.1*	*0.1*	*0.01*	*0.1*

1,2,3,4,6,7,8-HpCDD	*0.01*	*0.01*	*0.001*	*<0.001*
OCDD	*0.001*	*0.0003*	*-*	*-*
Furans				
2,3,7,8-TCDF	*0.1*	*0.1*	*0.05*	*1*
1,2,3,7,8-PeCDF	*0.05*	*0.03*	*0.05*	*0.1*
2,3,4,7,8-PeCDF	*0.5*	*0.3*	*0.5*	*1*
1,2,3,4,7,8-HxCDF	*0.1*	*0.1*	*0.1*	*0.1*
1,2,3,7,8,9-HxCDF	*0.1*	*0.1*	*0.1*	*0.1*
1,2,3,6,7,8-HxCDF	*0.1*	*0.1*	*0.1*	*0.1*
2,3,4,6,7,8-HxCDF	*0.1*	*0.1*	*0.1*	*0.1*
1,2,3,4,6,7,8_HpCDF	*0.01*	*0.01*	*0.01*	*0.01*
1,2,3,4,7,8,9-HpCDF	*0.01*	*0.01*	*0.01*	*0.01*
OCDF	*0.001*	*0.0003*	*0.0001*	*0.0001*

TEF schemes for dioxin-like PCBs			
Congener	***WHO-TEF***		
	2005	**1997/8**	
	Humans / mammals	***Fish***	***Birds***
Non-ortho PCBs			
3,4,4',5-TCB (81)	*0.0001*	*0.0005*	*0.1*
3,3',4,4'-TCB (77)	*0.0003*	*0.0001*	*0.05*
3,3',4,4',5 - PeCB (126)	*0.1*	*0.005*	*0.1*
3,3',4,4',5,5'-HxCB(169)	*0.03*	*0.00005*	*0.001*
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	*0.00003*	*<0.000005*	*0.0001*
2,3,4,4',5-PeCB (114)	*0.00003*	*<0.000005*	*0.0001*
2,3',4,4',5-PeCB (118)	*0.00003*	*<0.000005*	*0.00001*
2',3,4,4',5-PeCB (123)	*0.00003*	*<0.000005*	*0.00001*
2,3,3',4,4',5-HxCB (156)	*0.00003*	*<0.000005*	*0.0001*
2,3,3',4,4',5'-HxCB (157)	*0.00003*	*<0.000005*	*0.0001*
2,3',4,4',5,5'-HxCB (167)	*0.00003*	*<0.000005*	*0.00001*
2,3,3',4,4',5,5'-HpCB (189)	*0.00003*	*<0.000005*	*0.00001*

Schedule 7 - Site plan



END OF PERMIT