Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Third Energy UK Gas Limited

Knapton Generating Station
East Knapton
Malton
North Yorkshire
YO17 8JF

Variation application number

EPR/HP3038LA/V006

Permit number

EPR/HP3038LA

Knapton Generating Station
Permit number EPR/HP3038LA

Introductory note

This introductory note does not form a part of the permit

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

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Only the variations specified in schedule 1 are subject to a right of appeal.

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the combustion activities in this permit against the revised BAT Conclusions for the large combustion plant (LCP) sector published on 17th August 2017. Only activities covered by this BAT Reference Document have been reviewed.

This variation makes the below changes following operator confirmation that the LCP has ceased operating:

- Table S1.1 has been amended to prevent the operation of the LCP after 17 August 2021.

We have not made any changes to the permit as a result of the review under Article 21(3) of the IED and the consolidation of the Environmental Permitting Regulations that came into force on the 4 January 2017.

There are no other changes to the permitted activities which continue to be operated as follows:

Third Energy UK Gas Limited, 'the Operator', operates an Open Cycle Gas Turbine (OCGT) power station, a Gas Conditioning Plant, a mining waste operation, incineration of hazardous waste by flaring and the handling, storage and treatment of crude oil within the installation, located in East Knapton to the North East of Malton, North Yorkshire (at National Grid Reference SE 8875 7698).

The LCP is capable of supplying electricity for up to 40,000 homes and is designated as LCP number 376. However, the LCP is not operating currently.

The Operator has implemented an Environmental Management System for the installation.

The Open Cycle Gas Turbine Engine, which was commissioned in 1994, has a thermal input of 110 MWth, and drives a generator producing an electrical output of 41.5 MW (Section 1.1 A(1) (a) activity of Schedule 1 to the Regulations). The engine operates exclusively on sour gas (natural gas containing hydrogen sulphide, H2S, together with other sulphur compounds) which is recovered from a local gas field and delivered by pipeline to the installation and stored prior to conditioning and combustion.

Conditioning of the sour gas takes place within the Gas Conditioning Plant (Section 1.2 A(1) (a) activity of Schedule 1 to the Regulations), where water and hydrocarbon liquids are removed from the gas stream. The gas is then heated above its water and hydrocarbon dew point using a gas-fired boiler (with a thermal input of 1 MWth). This process ensures that the gas meets a suitable quality for use as a fuel within the gas turbine.

A non-hazardous mining waste operation covers the storage of mining waste received from the local gas field. These wastes comprise produced water, flowback fluid from shale gas production from the local well network and brine for well suspension generated during workovers or well abandonment.

A number of ancillary systems are also used to enable viable operation of the installation, including a water treatment plant, a ground flare, a gas fired pre-heater and an emergency gas oil generator for a firewater pump.

The principal environmental issues concerned with the installation include emissions released to air and emissions produced during the gas conditioning process. Emissions to air are primarily derived from the gas turbine exhaust. Emissions from the gas treatment plant arise from the removal of gas condensate, water, and other additives concerned with hydrate prevention and pipeline protection.

The main air emissions of concern associated to the gas turbine exhaust are oxides of nitrogen (NOx) and sulphur dioxide (SO_2).

Emissions to air are also released from the ground flare, the hydrochloric acid (HCl) storage tank within the water treatment plant and the gas-fired pre-heater.

Effluent is produced from two main areas within the installation: the Gas Conditioning Plant and the water treatment plant.

Increased traces of hydrocarbon fractions and moisture occur naturally within abstracted gas. It is necessary to remove these prior to use within the gas turbine engine. This condensate – consisting of hydrocarbon liquids and water (salt saturated brine) – together with injected additives, is removed within the gas conditioning plant. Additives, which are injected into the gas stream at the well heads in order to prevent the occurrence of hydrate formation and corrosion, include glycol and corrosion inhibitor. Gas condensate is stored prior to its disposal via the KM-3 well at the Kirby Misperton A Wellsite and covered by a separate permit.

There are no releases to sewer from the site. Uncontaminated surface water is discharged to Difford Beck, via an oil interceptor.

Land use surrounding the Installation and dominating the whole of the Vale of Pickering is primarily agricultural, both arable and pasture land. Small villages and farm buildings are scattered within the surrounding farmland, together with a number of small woodland areas. The closest residential property is located 650 metres to the northeast of the Installation. East Knapton and West Knapton are small villages, and lie between 1.0 kilometres and 1.5 kilometres southwest from the Installation.

There are two designated European (Natura 2000) sites within 10 kilometres of the Installation. The closest of these sites is the River Derwent, designated as a Special Area of Conservation (SAC), and lies at a distance of 5.9 kilometres, the second being Ellers Wood and Sand Dale (SAC) at a distance of 8.2 kilometres. There are no Sites of Special Scientific Interest (SSSI) designated sites within a distance of 2 kilometres from the Installation.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application received HP3038LA	Duly made 31/03/2006	EPR reference: EPR/HP3038LA/A001
Additional information received	29/03/2007, 03/08/2007	
Permit determined EPR/HP3038LA	11/09/2007	Original permit issued to Viking UK Gas Limited.
Variation EPR/HP3038LA/V002	16/03/2010	Installation of a Reverse Osmosis filtration unit.
Notified of change of company name	16/06/2014	Name changed to Third Energy UK Gas Limited.
Variation issued EPR/HP3038LA/V003	09/07/2014	Varied permit issued to Third Energy UK Gas Limited.
Regulation 60(1) Notice – request for information dated 31/10/14	30/03/2015	Response to RFI for IED variation.

Status log of the permit		
Description	**Date**	**Comments**
Additional information received	16/06/2015	Response to request for further information (RFI) dated 15/05/15.
Additional information received	16/06/2015	Response to request for further information (RFI) dated 28/05/15.
Variation determined EPR/HP3038LA/V004	23/12/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/16.
Application EPR/HP3038LA/V005 (variation and consolidation)	Duly made 27/01/2017	Application to vary to add a listed activity and mining waste operation and change the discharge to water monitoring frequency.
Schedule 5 notice response received	16/11/2017	Response to Schedule 5 notice dated 10/10/17.
Additional information received	10/06/2018	Response to request for further information (RFI) dated 11/05/18.
Additional information received	25/06/2018	Revised site layout plan provided in response to request for further information dated 20/06/2018.
Additional information received	13/07/2018	Response to request for further information (RFI) dated 05/07/18.
Variation determined EPR/HP3038LA/V005 [Billing reference: KP3039YC]	08/05/2019	Varied and consolidated permit issued in modern condition format.
Regulation 61 Notice sent to the Operator	01/05/2018	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for large combustion plant.
Regulation 61 Notice response.	15/11/2018	Response received from the Operator.
Response to request for information	01/04/2020	Confirmation that LCP has ceased operating
Variation determined EPR/HP3038LA/V006 (Billing ref: MP3606BA)	30/04/2020	Varied and consolidated permit issued. Effective from 30/04/2020

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
Radioactive Substances Permit	EPR/CB3694DF/A001	08/05/19

End of introductory note.

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit number

EPR/HP3038LA

Issued to

Third Energy UK Gas Limited ("the operator"),

whose registered office is

Knapton Generating Station
East Knapton
Malton
North Yorkshire
YO17 8JF

company registration number 1421481

to operate regulated facilities at

Knapton Generating Station
East Knapton
Malton
North Yorkshire
YO17 8JF

to the extent set out in the schedules.

The notice shall take effect from 30/04/2020.

Name	Date
Claire Roberts	**30/04/2020**

Authorised on behalf of the Environment Agency.

Schedule 1

The following conditions were varied as a result of an Environment Agency initiated variation:

Table S1.1, as referenced by condition 2.1.1, has been been amended to prevent operation of the large combustion plant after 17/08/2021.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/HP3038LA

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/HP3038LA/V006 authorising,

Third Energy UK Gas Limited ("the operator"),

whose registered office is

Knapton Generating Station
East Knapton
Malton
North Yorkshire
YO17 8JF

company registration number 1421481

to operate an installation and a mining waste operation at

Knapton Generating Station
East Knapton
Malton
North Yorkshire
YO17 8JF

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

Name	Date
Claire Roberts	**30/04/2020**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, so far as is practicable, including those risks 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 the permit.

1.2 Energy efficiency

1.2.1 For the following activities referenced in schedule 1, table S1.1 (A1 to A9) The operator shall:

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

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

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

1.3 Efficient use of raw materials

1.3.1 For the following activities referenced in schedule 1, table S1.1 (A1 to A9) 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;

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

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

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

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

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

2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP376. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.

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

2.3.4 For the following activities referenced in schedule 1, table S1.1: LCP 376. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.

2.3.5 The operator shall:

(a) review the waste management plan at least every five years from the date of initial approval and submit any written revisions to the Environment Agency for approval.

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

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

2.3.7 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.

2.3.8 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.

2.4 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 S1.4 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 table S3.1. S3.2 and S3.3 shall not be exceeded.

3.1.3 Subject to any other condition of this permit, periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

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

3.2.2 The operator shall:

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

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

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

3.2.4 The Operator shall take appropriate measures:

(a) to prevent the input of hazardous substances to groundwater; and

(b) where a non-hazardous pollutant is not controlled by an emission limit, to limit the input of such non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.

3.3 Odour

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

3.3.2 The operator shall:

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

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

3.4 Noise and vibration

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

3.4.2 The operator shall:

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

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

3.5 Monitoring

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

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

(b) process monitoring specified in table S3.4;

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

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

3.5.4 The operator shall carry out:

(a) regular calibration, at an appropriate frequency, of systems and equipment provided for carrying out any monitoring and measurements necessary to determine compliance with this permit; and

(b) regular checking, at an appropriate frequency, that such systems and equipment are serviceable and correctly used.

3.5.5 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, S3.3 and S3.4 unless otherwise agreed in writing by the Environment Agency.

3.5.6 If required by the Environment Agency, the operator shall:

(a) take such samples and conduct such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, at such times and using such methods and equipment as the Environment Agency may specify; and

(b) keep samples, provide samples, or dispatch samples for tests at a laboratory, as the Environment Agency specifies, and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the relevant legislation are complete.

3.5.7 On a monthly basis, or as agreed in writing with the Environment Agency; the Operator shall analyse the flare feed gas. The analysis shall include speciation and concentration of organic substances, carbon monoxide, sulphur containing compounds, halogen containing compounds and moisture.

3.5.8 The operator shall by calculation determine the emissions of the substances identified in table S3.1, based on the most recent feed gas composition analysis, feed gas flow rate and combustion efficiency of the flare.

3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:

(a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.

3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

3.6.7 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) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;

(b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;

(c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;

(d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;

(e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and

(f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

4.1.1 All records required to be made by schedules 3, 4 and 5 to this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

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

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, 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 maintain convenient access, in either electronic or hard copy, to the records, plans and management system required to be maintained by this permit.

4.2 Reporting

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

4.2.2 For the following activities referenced in schedule 1, table S1.1 (A1 to A9) 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 resource efficiency metrics set out in schedule 4 table S4.2; and

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

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

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

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

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

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

4.3 Notifications

4.3.1 In the event:

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

(i) inform the Environment Agency,

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

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

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

(i) inform the Environment Agency, and

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

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

4.3.2 The 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 supported by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

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

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

Where the operator is a registered company:

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

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

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

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

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

In any other case:

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

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

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

4.3.5 For the following activities referenced in schedule 1, table S1.1 (A1 to A9) where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

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

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

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

4.3.7 Where the operator proposes to make an amendment to the approved waste management plan, referenced in schedule 1, table S1.1 (A11) which 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 implementing the amended waste management plan in place of the original; and

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

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

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

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

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

4.3.9 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

4.4 Interpretation

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

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

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity and WFD Annex I and II operations**	**Limits of specified activity**
A1	S1.1 A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.	LCP376 (OCGT mode): Operation of an open cycle gas turbine power plant (OCGT) burning sour gas to produce electricity. A 1MW gas fired boiler to pre heat the fuel gas prior to use in the gas turbine.	From receipt of conditioned fuel gas from the gas conditioning plant, pre heating gas prior to combustion and to the discharge of exhaust gases and the generation of electricity for export. Operation of LCP376 shall not take place from 17 August 2021.
A2	S1.2 A(1)(a): Refining gas where this is likely to involve the use of 1,000 or more tonnes of gas in any 12-month period.	Conditioning of the sour gas in the Gas Conditioning Plant, where the hydrocarbon condensate, free water (salt saturated brine), corrosion inhibitor and glycol is removed from the gas supply.	From the receipt of sour gas to the despatch of conditioned fuel gas and waste.
A3	S1.2 A(1)(e)(i): The loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.	Production of fluids extracted from the resource formation by beam pump, phase separation and storage of products (crude oil) and waste prior to onward transport.	From receipt of production fluids to the despatch of products (crude oil) and waste. Crude oil shall be stored in vessels which are of sufficient strength and structural integrity to ensure that it is unlikely to burst or leak in its ordinary use. Any road tanker loading systems must be fully contained and the delivery system shall be fitted with dry break couplings. During loading of road tankers, the road tanker shall be back vented to the bulk storage tank, or routed to a suitable vent treatment system. Provisions shall be made to minimise the emissions of non methane volatile organic compounds (NMVOC) and methane from the oil storage tank vent. Any water, contaminated with crude oil, which is drained off from the storage vessel and is not being recycled for reinjection must be collected for treatment before disposal. Any water collected in the secondary containment (bund) must be sampled and analysed before release to controlled water. If found to be contaminated with crude oil, it must be collected for treatment before disposal.
A4	S5.1 A(1)(a): The incineration of hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 10 tonnes per day.	Flaring of waste gas from onshore oil and gas production activities using an enclosed ground flare.	From the receipt of waste gas into the enclosed flare to the despatch of waste combustion gases.

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity and WFD Annex I and II operations**	**Limits of specified activity**
	Directly Associated Activity		
A5	Water treatment plant.	An ion exchange plant to produce demineralised water for injection into the GT combustion chamber.	From the receipt of water treatment chemicals and potable water within the water treatment plant, to the production of high purity water and waste.
A6	Service systems to serve the GT.	Miscellaneous utility systems providing services to the gas turbine – including the emergency firewater pump and reciprocating gas compressor (for gas supply pressurisation).	From receipt of raw materials to the dispatch for use.
A7	Discharge to controlled waters.	Surface drainage to Difford Beck.	Handling and storage of site surface ater run-off via the oil interceptor pit, and subsequent discharge to Difford Beck.
A8	Discharge to contolled waters.	Water treatment by reverse osmosis filtration unit	From the receipt of potable water within the reverse osmosis unit and the subsequent discharge to Difford Beck.
A9	Storage of additional raw materials.	Storage of raw materials and chemicals.	From receipt of raw materials to the despatch for use.
	Description of activities for waste operations	**Limits of activities**	
A10	The management of extractive waste from prospecting for mineral resources not involving a waste facility. The management of extractive waste generated by well workover. The management of extractive waste generated by well abandonment.	Permitted waste types shall conform to the description in the approved waste management plan which constitutes Chapter 6 of the following document: Knapton Generating Station. Accompanying Report to inform Variation to Installation Permit EPR/HP3038LA/V004 to allow crude oil storage, and a mining waste facility, and Application for a Radioactive Substances Permit. KGSInsRepv2. June 2018. The activities shall be limited to the following extractive waste types – non-hazardous water based drilling muds, hazardous drill cuttings, non-hazardous drill cuttings. The activities shall be limited to those described in the approved Waste Management Plan referenced in Table S1.2 below. The storage of extractive waste is limited to temporary storage in secure containment as part of the collection and transportation of waste from the site.	
A11	The management of extractive waste by way of a waste facility for non-hazardous waste.	Permitted waste types shall conform to the description in the approved waste management plan which constitutes Chapter 6 of the following document: Knapton Generating Station. Accompanying Report to inform Variation to Installation Permit EPR/HP3038LA/V004 to allow crude oil storage, and a mining waste facility, and Application for a Radioactive Substances Permit. KGSInsRepv2. June 2018. The activities shall be limited to the following extractive waste types – non hazardous produced water, non hazardous flow back fluid, non hazardous suspension brines.	

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to Section 2.1 and 2.2 in the Application.	31/03/2006
Variation Application	Variation All.	Application 08/12/2009 and further information received 04/01/2010 & 08/02/2010
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance route and operating techniques identified in response to the questions listed below: 2 – The compliance route selected for the LCP. 4 – The configuration of the LCP. 5 – The net rated Thermal input of the LCP and the method by which it was derived. 6 – The definition of the conditions that will define the start-up and shutdown points. 9 – The proposed Emission Limit Values. 10 – Monitoring requirements.	Received 30/03/15
Receipt of additional information to the regulation 60(1) Notice requested by letter dated 15/05/15	Compliance route and operating techniques identified in response to the questions listed below: 5 – The net rated Thermal input of the LCP and the method by which it was derived. 6 – The definiation of the conditions that will define the start-up and shutdown points. 9 – The proposed Emission Limit Values. 10 – Monitoring requirements.	Received 16/06/15
Receipt of additional information to the regulation 60(1) Notice requested by letter dated 28/05/15	Compliance route and operating techniques identified in response to the questions listed below: 5 – The net rated Thermal input of the LCP and the method by which it was derived. 6 – The definition of the conditions that will define the start-up and shutdown points. 9 – The proposed Emission Limit Values. 10 – Monitoring requirements.	Received 16/06/15
Response to request for information issued 11/05/18	Waste Management Plan, which constitutes Chapter 6 of the following document: Knapton Generating Station. Accompanying Report to inform Variation to Installation Permit EPR/HP3038LA/V004 to allow crude oil storage, and a mining waste facility, and Application for a Radioactive Substances Permit. KGSInsRepv2. June 2018	10/06/18
Response to request for information issued 11/05/18	Knapton Generating Station. Accompanying Report to inform Variation to Installation Permit EPR/HP3038LA/V004 to allow crude oil storage, and a mining waste facility, and Application for a Radioactive Substances Permit. KGSInsRepv2. June 2018	10/06/18
Response to request for information issued 20/06/18	Revised site layout plan provided titled 'Knapton Generating Station Environmental Plan', KGSIns2 Revision 2.	25/06/18
Response to request for information issued 05/07/18	Email containing details of procedures in place to manage emissions from the nitrogen lift going through the flare; whether gas composition can be controlled through balancing within the pipeline system resulting in controlled combustion; and how much methane and hydrogen sulphide could be vented at this stage.	13/07/18
Secondary and tertiary containment plan as approved under IC17	All of document	Date of approval of IC17
Leak detection and repair plan as approved under IC18	All of document	Date of approval of IC18

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Gas management system improvement plan as approved under IC20	All of document	Date of approval of IC20
Vapour recovery plan as approved under IC22	All of document	Date of approval of IC22
Site surface water management plan as approved under IC23	All of document	Date of approval of IC23
Odour Management Plan as approved under IC25	All of document	Date of approval of IC25

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	A written plan shall be submitted to the Agency for approval detailing measures required to ensure that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation as documented within section B2.10 of the application. The plan shall include a timetable for implementation of such measures in order to meet the requirement of condition 3.6.3, and the notification requirements of condition 2.5.2.	Complete
IC2	The Operator shall conduct a feasibility study for the periodic monitoring of Particulate emissions from emission point A1, in accordance with all relevant Agency Technical Guidance, including M2: "Monitoring of stack-emissions to air." A written summary report shall be submitted to Agency documenting the findings from the investigation. Where an appropriate method is identified, the Operator shall submit a timetable for the implementation of such a method.	Complete
IC3	The Operator shall submit a report containing a review of Best Available Techniques for the reduction of sulphur dioxide emissions, as detailed within sections 2.1.3 and 2.2.3 of TGN V2.03 "IPPC Sector Guidance Note for Combustion Activities", 27 July 2005. The review shall identify all available options, with a view to achieving a reduction of sulphur in fuel in accordance with Best Available Techniques, as detailed within section 2.2.1.3 of TGN S1.02 "Guidance for the Gasification, Liquefaction and Refining Sector". The report shall include a plan of action, together with a timetable for implementing the chosen technique(s). The plan shall be implemented by the operator from the date of approval in writing by the Environment Agency.	Complete
IC4	The Operator shall assess options available for the treatment of effluent from the Water Treatment Plant, having regard to :- • TGN S1.02 "Guidance for the Gasification, Liquefaction and Refining Sector, section 2.2.2; • TGN V2.03 "IPPC Sector Guidance Note for Combustion Activities, section 2.2.6; • EPA 1990 – Process Guidance Note IPR 1/2 (Revised 1994) – Combustion Processes : Gas Turbines, sections 6, 10.4, and 11.3; • IPPC : Reference Document on Best Available Techniques in Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector (February 2003). A written report summarising the findings, together with an assessment into possible alternative disposal routes, shall be submitted to the Agency. The report shall include a timetable for the implementation of any identified improvements.	Complete

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC5	The Operator shall undertake a study into methods for calculating NOx emissions from the ground flare, and methane emissions from the gas conditioning and combustion plant. A written summary report shall be submitted to Agency documenting the findings from the study. Where appropriate methods are identified, the Operator shall submit a timetable for the implementation of such methods.	Complete
IC6	A written plan shall be submitted to the Environment Agency detailing measures required in order to comply with the requirements of section 2.2.5 of TGN S1.02 "Guidance for the Gasification, Liquefaction and Refining Sector"; and 2.2.9 of TGN V2.03 "IPPC Sector Guidance Note for Combustion Activities". The plan shall identify dates for the implementation of measures to improve drainage within the chemical storage area, as documented within chapter 5 (supporting section B9) of the application. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.	Complete
IC7	The Operator shall undertake an odour assessment, having regard to :- • Technical Guidance Note H4, Horizontal Guidance for Odour Part 2, Assessment and Control (version 1, October 2002); • TGN S1.02 "Guidance for the Gasification, Liquefaction and Refining Sector"; • TGN V2.03 "IPPC Sector Guidance Note for Combustion Activities"; A written summary report shall be submitted to the Agency detailing the findings of the assessment. Where any improvements are identified, the Operator shall submit a timetable for their implementation.	Complete
IC8	The Operator shall submit a report to the Agency detailing current energy efficiency measures in comparison to those required for further energy-efficiency, as detailed within section 2.7.3 of TGN V2.03 "IPPC Sector Guidance Note for Combustion Activities", 27 July 2005. This report shall include but not be limited to:- • A feasibility study for the installation of a steam turbine, producing electricity through means of heat recovery. Where the Operator has identified a proposal within the report, which is regarded as BAT for the Installation, the Operator shall include a timescale for the implementation and commissioning of such a facility.	Complete
IC9	The Operator shall carry out an investigation to examine alternative techniques for the prevention of hydrate formation and pipeline corrosion, and submit a written report to the Agency summarising their findings. Where any technique(s) is considered 'best available techniques' over that of the current use of Corrosion Inhibitor and Glycol, the Operator shall submit proposals for their implementation.	Complete
IC10	The Operator shall produce a written site closure plan, in accordance with section 2.11 of V2.03 "IPPC Sector Guidance Note for Combustion Activities", 27 July 2005. A copy of the plan shall be submitted to the Environment Agency.	Complete
IC11	The Operator shall collect a representative 24 hour composite sample of effluent from the Reverse Osmosis Unit prior to discharge to Difford Beck on a monthly basis for a period of 6 consecutive months. Sampling methodology is to be agreed in writing in advance with the Agency. These 24 hour composite samples are to be submitted for analysis for pollutants outlined in Section 9 of Variation Application dated 08/12/2009 and those parameters listed in Table 4.2 of permit HP3038LA. Analysis of all pollutants is to be by a method as outlined in Environment Agency Monitoring Guidance Note M18 "Monitoring of Discharges to Water and Sewer, Version 2" unless agreed in writing in advance with the Agency. On receipt of analytical results a report is to be submitted the Agency including, as a minimum, levels of all pollutants and an impact assessment using the Environment Agency H1 Software Tool. Monthly reports are to be submitted 2 weeks from receipt of analytical results.	Complete

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC12	The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP376. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised). Evidence to support this figure, in order of preference, shall be in the form of:- a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), b) Performance test results after a significant modification (quoting the specified standards or test codes), c) Manufacturer's contractual guarantee value, d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; f) Operational efficiency data as verified and used for heat accountancy purposes, g) Data provided as part of Due Diligence during acquisition, *Performance test results shall be used if these are available.	Complete
IC13	Upon completion of IC12 the operator shall review the accuracy of the start up and shutdown % load which is defined in table S1.5 and submit in writing for approval by the Environment Agency the % load settings that should be used for the definition of start up and shutdown.	Complete
IC14	'For LCPD LCP 418 (now LCP 376 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry.	Complete
IC15	The operator shall submit a written report to the Environment Agency for approval. The report must identify Best Available Techniques (BAT) for an appropriately sized plant suitable for the load at Knapton Generating Station. The performance of the current OCGT at Knapton Generating Station should then be compared, including energy efficiency and emissions of oxides of nitrogen and carbon monoxide. The report shall include an upgrade plan to meet BAT.	Submitted and subject to regular update
IC16	The operator shall submit a written report to the Environment Agency for approval. The report must identify measures that will be taken to minimise operation above the environmental equivalent of 1500 hours per year at low load operation (70% load or below 70%) having regard to BAT identified in IC 15.	Submitted and subject to regular update
IC17 *Containment*	The operator shall submit a written 'secondary and tertiary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review conducted, by a competent person, in accordance with the methodology detailed within CIRIA C736 (2014), of the condition and extent of secondary and tertiary containment systems where all polluting liquids and solids are being stored, treated, and/or handled. This review should consider, but is not limited to, the storage vessels, separators, bath heaters, bunds, loading and unloading areas, transfer pipework/pumps, temporary storage areas, and liners underlying the site. The plan must contain dates for the implementation of individual improvement measures necessary for the secondary and tertiary containment systems to adhere to the standards detailed/referenced within CIRIA C736 (2014), or equivalent. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/02/2020

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC18 *Leak detection*	The operator shall submit a written 'leak detection and repair plan', and associated procedures and shall obtain the Environment Agency's written approval to it. The plan will consider all activities listed in table S1.1. The plan will identify, measure and reduce emissions of volatile organic compounds and other substances to air, appropriate to their operations and in accordance with European standard EN15446 or an equivalent standard. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/11/2019
IC19 *Management system*	The operator shall review and update the written management system (referred to in condition 1.1.1) to ensure the procedures are in place to meet the requirements resulting from the variation of this permit. In particular the review should ensure that the following points are included in the management system: i) The procedure for identifying bund fill levels, e.g. high level alarm on unmanned sites ii) The procedures for testing the impermeable membrane and subsequent remediation measures if required. iii) The procedure for notifying the Environment Agency on each occasion where natural gas is vented uncombusted to atmosphere for safety purposes. Notification to include, but not limited to: reasons for, duration of and quantity of gas vented. iv) The procedure for providing emergency flare capacity in the event that primary flare / gas management processes are unavailable / if venting likely to continue for more than 24 hours.	08/08/2019
IC20 *Gas management including flaring, venting and use of gas in other site equipment*	The operator shall submit a written gas management improvement plan and shall obtain the Environment Agency's written approval for it. The plan must contain detailed consideration of all available options for the beneficial utilisation of all of the available gas from your activities, including gas that is not already utilised, gas vented from storage vessels and gas vented during the loading and unloading of road vehicles where relevant. Where such utilisation is not feasible, your plan must consider in detail all available options, both combustion and non-combustion based (including but not necessarily limited to flaring, vapour recovery, scrubbing and adsorption), for the disposal or abatement / mitigation of your waste gas so as to minimise its environmental impacts as far as available techniques allow. The gas management improvement plan shall also refer to the review of emissions undertaken as a result of IC 21. If emission limits were not being met, the plan shall including actions that will be taken to ensure that emission limits are met. The plan must contain dates for the implementation of the identified improvement measures. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/11/2020
IC21 *Air emissions*	The operator shall monitor point source emissions to air in accordance with table S3.1. The operator shall submit a review of emissions compared to the emission limits in table S3.1 to the Environment Agency and obtain the Environment Agency's written approval of the report.	08/11/2019
IC22 *Vapour recovery during loading/unloading*	The operator shall submit a written plan for vapour capture and recovery from loading and unloading activities and shall obtain the Environment Agency's written approval to it. The plan must detail the installation of a vapour capture / recovery system during the loading and unloading of [road and / or rail] vehicles. The plan must contain dates for the implementation of the identified improvement measures. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/11/2019

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC23 *Surface water*	The operator shall submit a written 'site surface water management plan' and shall obtain the Environment Agency's written approval to it. The plan will be based on the understanding from the conceptual site model and environmental risk assessment where the risks to the water environment are clearly detailed. The plan shall include details of how rainwater is managed, collected, stored and treated where necessary prior to discharge or disposal. The plan shall contain dates for the implementation of any improvement measures necessary to ensure that there are no uncontrolled contaminated water discharges to the environment from the site. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/02/2020
IC24 *Site Condition Report*	The operator shall undertake a review of the Site Condition Report to ensure Article 22 of the Industrial Emissions Directive is complied with. The review shall include at least the following: i) consideration of oil storage areas including oil storage vessels, bunds, loading and unloading areas and other potential sources of contamination as shown in the site location plan ii) reference to any historical spillages, the chemicals involved and locations iii) baseline soil sample results and groundwater data	08/05/2020
IC25 *Odour*	The operator shall submit a written odour management plan and shall obtain the Environment Agency's written approval to it. The plan will identify and minimise the risks of pollution from odour. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/08/2019
IC26 Methane monitoring of flare feed gas	The operator shall carry out a review of methods to monitor methane in the flare feed gas and submit a written plan detailing the method(s) by which methane will be monitored and shall obtain the Environment Agency's approval of it. The plan shall be implemented in accordance with the Environment Agency's written approval.	08/11/2020

Table S1.4 Pre-operational measures for future development		
Reference	**Operation**	**Pre-operation measures**
PO 1	A10 and A11 - The storage of mining waste	Activity A10 and A11 referenced in Table S1.1 shall not begin until IC17 and IC23 has been satisfied.

Table S1.5 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**"Minimum Start-Up Load" Load in MW and as percent of rated power output (%)**	**"Minimum Shut-Down Load" Load in MW and as percent of rated power output (%)**
A1 LCP 376	16 MW; 37.8%	12 MW; 28.3%

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
-	-

Non-extractive wastes are not accepted as part of the permitted activities and there are no restrictions on raw materials or fuel under this schedule.

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [point A1 on site layout plan in Schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 70% to base load[1] 80 mg/m^3 MSUL/MSDL to base load[2]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	55 mg/m^3 70% to base load[1] 90 mg/m^3 MSUL/MSDL to base load[2]	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	100 mg/m^3 70% to base load[1] 160 mg/m^3 MSUL/MSDL to base load[2]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Carbon Monoxide	100 mg/m^3 70% to base load[1] MSUL/MSDL to base load[2]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Carbon Monoxide	110 mg/m^3 70% to base load[1] MSUL/MSDL to base load[2]	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Carbon Monoxide	200 mg/m^3 70% to base load[1] MSUL/MSDL to base load[2]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Sulphur Dioxide	100 mg/m^3 70% to base load[1] MSUL/MSDL to base load[2]	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Water Vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site layout plan in schedule 7]	LCP No. 376 Gas turbine fired on gas fed from gas conditioning plant activity A2 table S1.1	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 [point A2 on site layout plan in Schedule 7]	Gas flare	Oxides of nitrogen	-		Monthly by calculation	As approved in writing with the Environment Agency
		Carbon monoxide	-		Monthly by calculation	
		Total volatile organic compounds (VOCs)	-		Monthly by calculation	
		Methane	-		Monthly by calculation	
		Flare gas feed flow rate	-		Continuous	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Temperature	> 800 deg C		Frequency and method as approved in writing with the Environment Agency after completion of improvement condition IC21	
A3 [Point A3 on site layout plan in schedule 7]	Gas pre heater	-	-	-	-	-
A4 [Point A4 on site layout plan in schedule 7]	HCL scrubber vent stack	-	-	-	-	-
A5 [Location to be agreed in writing with the Environment Agency in accordance with IC17, IC23 and PO1]	Flow back storage tank(s)	To be agreed in writing with the Environment Agency in accordance with IC17, IC23 and PO1	To be agreed in writing with the Environment Agency in accordance with IC17, IC23 and PO1	To be agreed in writing with the Environment Agency in accordance with IC17, IC23 and PO1	To be agreed in writing with the Environment Agency in accordance with IC17, IC23 and PO1	To be agreed in writing with the Environment Agency in accordance with IC17, IC23 and PO1

Note 1: This ELV applies when the load is >70% throughout the reference period.

Note 2: This ELV applies when the load varies between MSUL/MSDL and 70% load during the daily reference period. MSUL and MSDL are defined in Table S1.5

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency[(1)]**	**Monitoring standard or method**
W1 (Oil interceptor pit – prior to discharge to Difford Beck) on site layout plan in Schedule 7	Surface water	Oil or grease	No visible emission	Spot check	Weekly	Visual inspection
W1 (Oil interceptor pit – prior to discharge to Difford Beck) on site layout plan in Schedule 7	Surface water	BOD	20 mg/ml	Spot sample	Annually	ISO 5815:1989 or EN 1899 (2 parts)

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency(1)**	**Monitoring standard or method**
W1 (Oil interceptor pit – prior to discharge to Difford Beck) on site layout plan in Schedule 7	Surface water	Total suspended solids	30 mg/ml	Spot sample	Annually	BS EN 872
W1 (Oil interceptor pit – prior to discharge to Difford Beck) on site layout plan in Schedule 7	Surface water	pH	5 to 9	Spot sample	Annually	BS6068-2.50

Note 1: If the Reverse Osmosis Unit is reintroduced (if plant production increases) the monitoring frequency will revert to the previous state, that is quarterly for BOD, total suspended solids and pH, and weekly for oil or grease.

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
The point at which the Liquid arisings return pipeline from the Installation meets liquid arisings from Marishes well	Gas Conditioning Plant	Total volume of Produced Water (m^3) discharged	No Limit	-	Annually	To be agreed with the Agency in writing
The point at which the Liquid arisings return pipeline from the Installation meets liquid arisings from Marishes well	Gas Conditioning Plant	Total volume of Produced Condensate (m^3) discharged	No Limit	-	Annually	To be agreed with the Agency in writing
The point at which the Liquid arisings return pipeline from the Installation meets liquid arisings from Marishes well	Gas Conditioning Plant	Total volume of Corrosion Inhibitor (m^3) discharged	No Limit	-	Annually	To be agreed with the Agency in writing
The point at which the Liquid arisings return pipeline from the Installation meets liquid arisings from Marishes well	Gas Conditioning Plant	Total volume of Glycol (m^3) discharged	No Limit	-	Annually	To be agreed with the Agency in writing

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Water Treatment Plant	Water Treatment Plant effluent	6 monthy	-	Total volume (m^3)
Methane in the gas feed	Methane concentration in flare feed gas	To be agreed in writing with the Environment Agency in accordance with IC26	To be agreed in writing with the Environment Agency in accordance with IC26	- %vol

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	Every 3 months	1 January, 1 April, 1 July, 1 October
Operating hours at <70% load	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
Operating hours at >70% load	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to water Parameters as required by condition 3.5.1	W1	Annually	1 October
Emissions to sewer, effluent treatment plant or other transfers off-site Parameters as required by condition 3.5.1	Liquid Arisings Return Pipeline	Annually	1 October
Process monitoring Parameters as required by condition 3.5.1	As Table S3.4	Every 6 months	1 January, 1 July
Flare feed gas Parameters are required by condition 3.5.7	As per condition 3.5.7	Every 3 months	1 January, 1 April, 1 July, 1 October
Volume gas flared	A2	Every 3 months	1 January, 1 April, 1 July, 1 October

Table S4.2: Resource Efficiency Metrics	
Parameter	**Units**
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m^3
Water Abstracted from Borehole Source	m^3
Water Abstracted from Estuarine Water Source	m^3
Water Abstracted from Sea Water Source	m^3
Water Abstracted from Mains Water Source	m^3
Gross Total Water Used	m^3
Net Water Used	m^3

Table S4.2: Resource Efficiency Metrics	
Parameter	**Units**
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO_x for each LCP	Annually	t
Total Emissions to Air of SO_2 for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr
Operating Hours at less than 70% load	Every 3 months, 1 January, 1 April, 1 July, 1 October	hr
Year to date equivalent Operating hours at 70% load	Every 3 months, 1 January, 1 April, 1 July, 1 October	hr
Opearating hours of flare	Annually	hr

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air & Energy	Form IED AR1 – SO_2, NO_x and dust mass emission and energy	08/05/19
LCP	Form IED HR1 – operating hours	08/05/19
Air	Form IED CON 2 – continuous monitoring	08/05/19
CEMs	Form IED CEM – Invalidation Log	08/05/19
Air	Form IED PM1 - discontinuous monitoring and load.	08/05/19
Resource Efficiency	Form REM1 – resource efficiency annual report	08/05/19
Water	Form water 1 or other form as agreed in writing by the Environment Agency	08/05/19
Process Monitoring	Form Process monitoring 1 or other form as agreed in writing by the Agency	08/05/19

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Other performance indicators	Form Performance 1 or other form as agreed in writing by the Agency	08/05/19
Environmental equivalent hours at 70 % load	As agreed in writing by the Environment Agency	08/05/19
Operating hours at < 70% load	As agreed in writing by the Environment Agency	08/05/19
Operating hours of flare	As agreed in writing by the Environment Agency	08/05/19
Flare	Form Flare reporting 1 or other form as agreed in writing by the Environment Agency	08/05/19

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

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

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

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

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

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

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

"approved waste management plan" means a plan of the type described in Article 5(1) of Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC, approved as part of the grant or variation of an environmental permit and as revised from time to time.

"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.

"background concentration" means such concentration of that substance as is present in:

for emissions to surface water, the surface water quality up-gradient of the site

"base load" means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

"breakdown" has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

"calendar monthly mean" means the value across a calendar month of all validated hourly means.

"CEN" means Commité Européen de Normalisation.

"Combustion Technical Guidance Note" means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

"Competent Authority" means, in relation to –

(a) London, the London Fire and Emergency Planning Authority;

(b) an area where there is a fire and civil defence authority, that authority;

(c) the Isles of Scilly, the Council of the Isles of Scilly;

(d) an area in the rest of England, the county council for that area, or where there is no county council for that area, the district council for that area;

"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.

"DLN" means dry, low NO_x burners.

"emissions to land" includes emissions to groundwater.

"Energy efficiency" the annual net plant energy efficiency means the value calculated from the operational data collected over the year.

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

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

"environmental equivalent hours " means the operational hours at 70% load or below, excluding the start up and shutdown periods multiplied by the % load divided by 70%.

“extractive waste” means waste resulting from the prospecting, extraction, treatment and storage of mineral resources and the working of quarries, excluding waste which does not directly result from these operations.

“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).

“Industrial Emissions Directive” means Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions

“inert waste” means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater. All of the criteria listed in Article 1 of Commission Decision 2009/359 must be fulfilled.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“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.

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

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“mining waste facility” means a waste facility as defined in Article 3(15) of Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC, where a mining waste operation is carried out.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“ncv” means net calorific value.

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“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.

“SI” means site inspector.

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

“year” means calendar year ending 31 December.

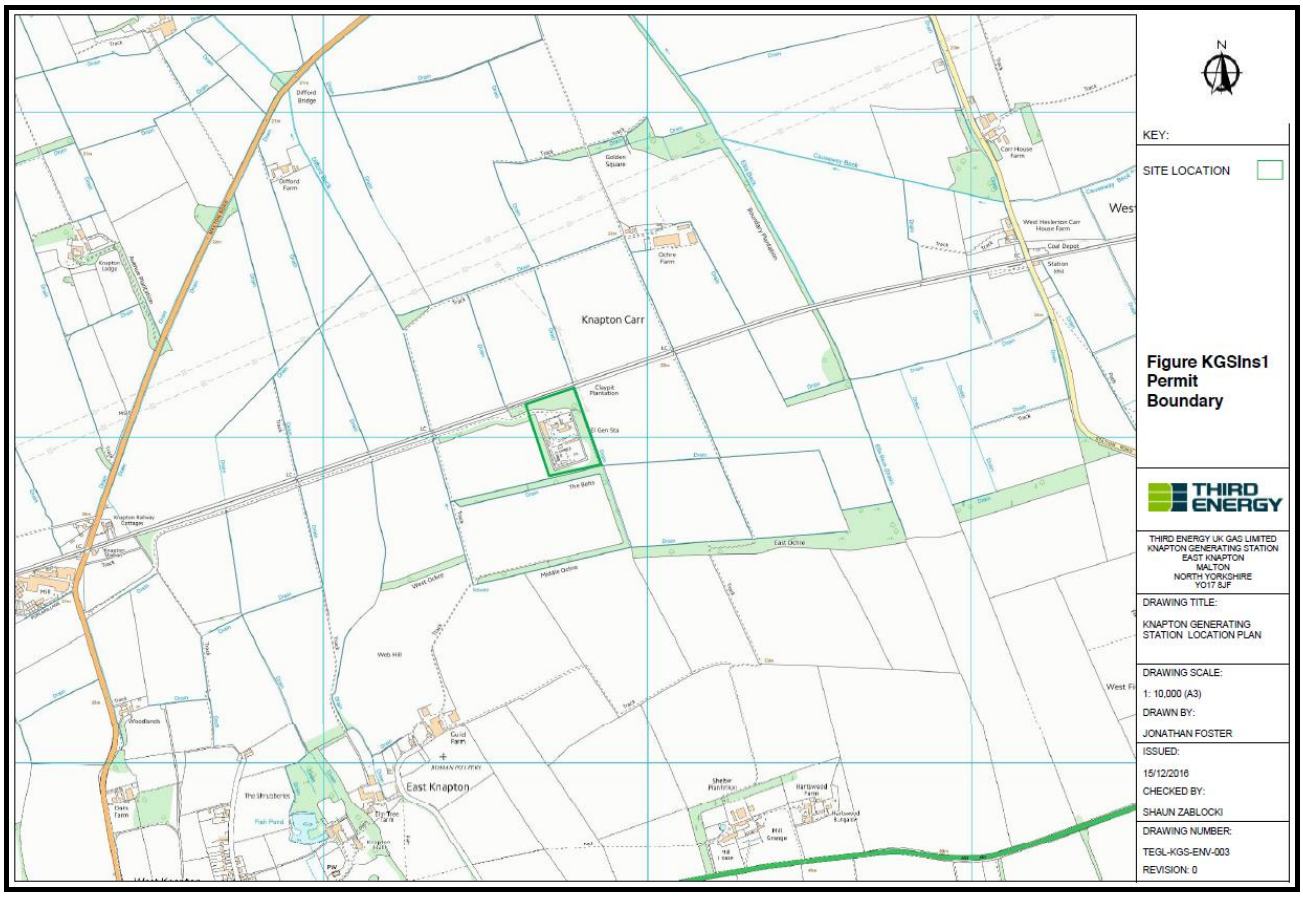
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

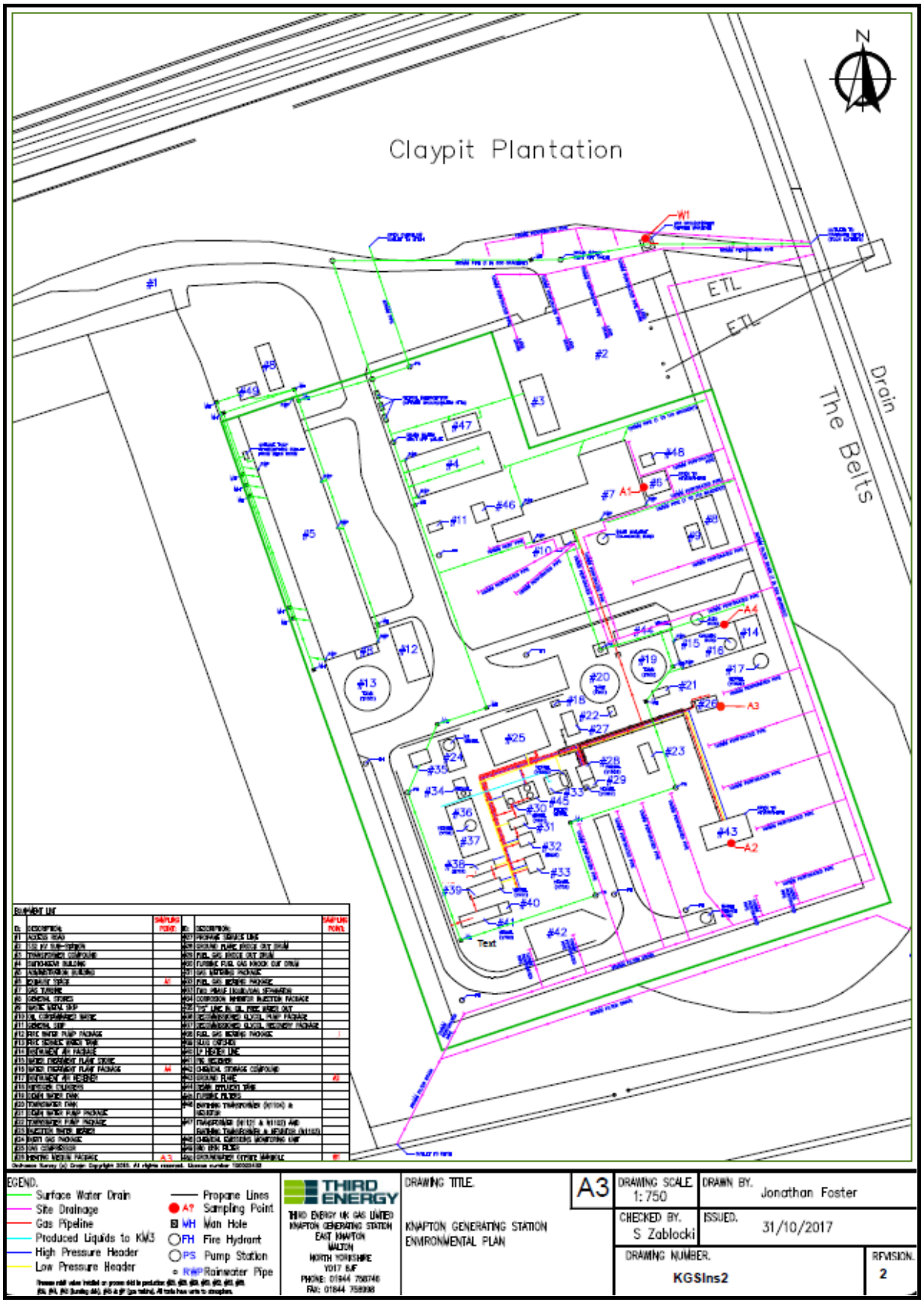
- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 KPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

Schedule 7 – Site plan

Site plan - showing installation boundary as referred to in condition 2.2.1.



Site Layout Plan



END OF PERMIT