Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Europa Oil & Gas Limited

Cloughton 2 Wellsite
Coastal Road
Scarborough
YO13 0DB

Permit number

EPR/YP3623LC

Cloughton 2 Wellsite
Permit number EPR/YP3623LC

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows

1. A Mining Waste Operation, as defined by the Mining Waste Directive and Schedule 20 of the Environmental Permitting (England and Wales) Regulations 2016 as amended, relating to the management of extractive waste not involving a Mining Waste Facility.
2. An underground non-hazardous Mining Waste Facility as defined by the Mining Waste Directive and Schedule 20 of the Environmental Permitting (England and Wales) Regulations 2016 as amended for the permanent deposit and accumulation of non-hazardous waste in the Carboniferous sandstones as the well test is completed. The non-hazardous waste will include drill cuttings coated with residual Low Toxicity Oil Based Muds ("LTOBM").
3. The incineration by flaring of hazardous waste, namely natural gas above 10 tonnes per day, as an activity listed in Part 2 Schedule 1.2 of the Environmental Permitting (England and Wales) Regulations 2016 as amended relating to the loading, unloading, handling and storage of crude oil.
4. A groundwater activity, as defined by the Groundwater Directive and Schedule 22 of the Environmental Permitting (England and Wales) Regulations 2016 as amended, for well stimulation via a proppant squeeze.

The application covers a single proposed wellsite located approximately 0.34 km southeast of Burniston, a village in the Scarborough borough of North Yorkshire. At present, the site is undeveloped farmland and does not hold an environmental permit. The proposed development will involve the construction of a temporary wellsite within a secure compound to drill an appraisal borehole. Should natural gas be encountered, a production test will be undertaken. If not, the borehole will be decommissioned and the site restored.

The proposed operations include:

- Drilling of an appraisal borehole to evaluate dry natural gas accumulations in Carboniferous Sandstones (primary target) and Permian formations (secondary targets).
- Proppant squeeze stimulation involving the injection of 300–500 m^3 of carrier fluid and proppant to enhance permeability across up to four injection stages.
- Production testing, including the incineration of natural gas above 10 tonnes/day.
- Mining waste operation and facility, due to permanent retention of proppant fluid within the subsurface formation.
- Groundwater activity, as defined under Schedule 22 of EPR2016, due to injection into saturated formations.

The principal releases into the environment comprise:

- Emissions to air from incineration of natural gas during testing.
- Surface water run-off from the wellsite, collected in a perimeter ditch and tested prior to off-site disposal.
- Contaminated water, if identified, will be removed by licensed hauliers to permitted waste treatment facilities.
- Engineering waste from drilling and testing operations will be managed under a Waste Management Plan and removed for disposal offsite at licensed facilities.

The site is partially screened by woodland and hedgerows, with the nearest residential receptors being Wayside Farm (280m) and Burniston village (310m).

Distances of the following nature conservation and habitat designation receptors to the wellsite:

- Iron Scar and Hundale Point to Scalby Ness Site of Special Scientific Interest (SSSI) – 0.64 km East
- North York Moors National Park – 0.81 km North
- Beast Cliff–Whitby (Robin Hood's Bay) Special Area of Conservation (SAC) – 6.04 km North
- North York Moors Special Protection Area (SPA) –
    - 7.58 km Northwest
    - 9.03 km Northwest
- Flamborough and Filey Coast SPA – 9.36 km Southeast
- Flamborough and Filey Coast Marine SPA – 9.36 km Southeast

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 EPR/YP3623LC/A001	Duly made 30/04/2025	Application for Mining Waste Facility with flare above 10 tonnes per day and Groundwater activity
Permit determined EPR/YP3623LC/A001	DD/MM/2026	Permit Issued to Europa Oil & Gas Limited

End of introductory note.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/YP3623LC

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Europa Oil & Gas Limited ("the operator"),

whose registered office is

54 Charlotte Street
London
W1T 2NS

company registration number **03093716**

to operate a mining waste operation and a groundwater activity at

Cloughton 2 Wellsite
Coastal Road
Scarborough
YO13 0DB

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

Name	Date
Principal Permitting Team Leader	**[DD/MM/YYYY]**

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.

1.1.4 The operator shall not start the closure of the mining waste facility [ies] unless agreed in writing by the Environment Agency.

1.2 Energy efficiency

1.2.1 For the following activities referenced in schedule 1, table S1.1 (AR1 to AR4) 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 (AR1 to AR4) 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.

1.5 Climate change

1.5.1 The operator shall review and if appropriate update, at least every 4 years, the climate change adaptation risk assessment submitted with the permit application and shall update the written management system as appropriate.

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.

2.2.2 The groundwater activities (AR4) referenced in schedule 1 table S1.1 shall take place at the discharge point(s) marked on the site plan(s) at schedule 7 to this permit.

2.2.3 The discharge shall be made from the wellbore(s) within Carboniferous sandstones Formation as listed in tables S1.1 and S3.3; and, the operating techniques that are the subject of conditions prefixed by condition 2.3 shall be applied at the location(s), or otherwise described, in schedule 7.

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 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.

2.3.3 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.

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

2.3.5 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.

2.3.6 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 Pre-operational conditions

2.4.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.3A have been completed

2.4.2 The operations specified in schedule 1 table S1.3B 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 and S3.3.

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

3.1.3 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 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;

(b) surface water or groundwater specified in table S3.2;

(c) 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, 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. A report of the analysis shall be submitted to the Environment Agency within 28 days of completion of each analysis.

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.

3.5.9 The groundwater monitoring plan specified in Table S1.3A, Schedule 1 shall be implemented unless otherwise agreed in writing with the Environment Agency.

3.5.10 Any revised groundwater monitoring plan shall be implemented in place of the original in accordance with the Environment Agency's written approval unless otherwise agreed in writing

3.6 Installation of monitoring boreholes

3.6.1 The Operator shall submit for approval to the Environment Agency details of the groundwater monitoring plan within 6 months of permit issue.

3.6.2 The monitoring boreholes shall be installed to depths, by methods and according to a design agreed in advance and in writing by the Environment Agency.

3.6.3 The following details regarding the monitoring boreholes shall be provided to the Environment Agency within 1 month of installation:

(a) casings/linings (length, diameter, material, type of grout or filter media and whether slotted or plain);

(b) depths and diameters of unlined sections;

(c) standing groundwater levels;

(d) details of strata encountered during drilling;

(e) reference levels in metres above ordnance datum;

(f) a location plan at a suitable scale showing the boreholes in relation to the point of discharge;

(g) national grid references of the borehole(s) in the form AB 12345 67890;

(h) any other information obtained from the borehole(s) relevant to the interpretation of water sample analysis.

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 (AR1 to AR4) 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.

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,

(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) 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 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:

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

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

In any other case:

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

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

(g) 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 (AR1, AR2 and AR4) 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, 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.

4.4 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**
AR1	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 a shrouded ground flare.	From the receipt of waste gas into the shrouded flare to the despatch of waste combustion gases. Limited to flaring of waste gas, from onshore oil and gas exploration and appraisal activities, produced from well testing activities in accordance with the approved Waste Gas Management Plan referenced Issue Number 260115
	Directly Associated Activity		
AR2	Storage of additional raw materials.	Raw materials.	From receipt of raw materials to the despatch for use.
	Description of activities for waste operations	**Limits of activities**	
AR3	The management of extractive waste in an underground mining waste facility for non-hazardous waste and for non-hazardous spent acid used in the hydrocarbon based stimulation fluid / proppant squeeze. The management of extractive waste in a mining waste operation and an above ground mining waste facility for temporary storage of hazardous waste The management of extractive waste from production activities, not involving a waste facility. The management of extractive waste generated by well workover and maintenance. The management of extractive waste generated by drilling The management of extractive waste generated by well decommissioning.	Permitted waste types shall conform to the description in the approved waste management plan. The activities shall be limited to those described in the approved Waste Management Plan referenced Issue Number 260119 The underground mining waste activity is limited to a non-hazardous mining waste facility for water-based cuttings, and for non-hazardous spent acid used in the hydrocarbon based stimulation fluid / proppant squeeze which are not fully recovered, as defined in the approved waste management plan and in PO-04, and at the following estimated True Vertical Depth Subsea for the 4 stages within the Carboniferous sandstones: 1. 2618 – 2736m 2. 1947 – 2292m 3. 1947 – 2292m 4. 1935 – 1947m The approved extent of the mining waste facility shall be established in accordance with Table S1.3A and pre-operational condition PO 09. The above ground mining waste activities are limited to mining waste operations as defined in the approved waste management plan. 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. Drilling additives shall be approved in writing by the Environment Agency prior to use.	

Table S1.1 activities		
	Description of activity for Groundwater	**Limits of specified activity**
AR4	The discharge of a hydrocarbon based stimulation fluid / proppant squeeze to ground via appraisal boreholes at Cloughton-2 Wellsite Subject to PO 08 in Table S1.3B	Discharge of hydrocarbon based stimulation fluid to ground via Cloughton-2 appraisal borehole for operations for the extraction of hydrocarbons to stimulate oil production in the Kirkham Abbey Formation The target formation for hydrocarbon based stimulation is the Carboniferous sandstones Formation The activities shall be limited to those described in the approved Waste Management Plan referenced Issue Number 260119 Stimulation fluids shall be approved in writing by the Environment Agency prior to use.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Waste Management Plan	All of document. Cloughton 2 Wellsite Waste Management Plan, Issue Number 260119	20/01/2026
Waste Gas Management Plan	All of document. Cloughton 2 Wellsite Waste Gas Management Plan, Issue Number 260115	15/01/2026
Surface Water Management Plan	All of document. Cloughton 2 Wellsite Surface Water Management Plan, Issue Number 260115	15/01/2026
Odour Management Plan	All of document. Cloughton 2 Wellsite Odour Management Plan, Issue Number 260115	15/01/2026
Groundwater Monitoring Plan	All or document	Date of approval of PO 01a
Waste Gas Management Plan	Updated as specified in PO 07	Date of approval of PO 07
Hydraulic Fracture Plan	All of document	Date of approval of PO 08
Waste Management Plan	Updated as specified in PO 02	Date of approval of PO 02
Environmental Risk Assessment	Parts 1. And 2. As specified in PO 03	Date of approval of PO 03
Odour Management Plan	Updated as specified in PO 04	Date of approval of PO 04
Leak Detection and Repair Plan	All of document	Date of approval of PO 05

Table S1.3A Pre-operational measures	
Reference	**Pre-operational measures**
PO 01a Groundwater monitoring	The operator shall before commencing activities authorised by the permit submit a written plan for groundwater monitoring during the operational and post decommissioning phases of the permitted activities and shall obtain the Environment Agency's written approval to it. The plan shall be based on the hydrogeological risk assessment and conceptual site model including, but not limited to: 1. Details of the proposed location: depth; and construction. method of the groundwater monitoring boreholes. 2. Number of groundwater monitoring boreholes to be installed. 3. Details of the geological formation that monitoring boreholes in PO 01b. are monitoring. 4. Groundwater sample collection procedures. 5. Details of the proposed monitoring parameters and frequency. 6. Details of how the data collected will be reviewed and interpreted including setting and reviewing trigger levels. 7. Details for further investigation if erroneous results are observed. The operator shall implement the plan in accordance with the Environment Agency's written approval.
PO 01b Groundwater monitoring	Following the Environment Agency's written approval as detailed in PO 01a above, the operator shall install the boreholes as approved by the Environment Agency and monitoring shall commence not less than 3 months prior to the construction of the exploration well.
PO 02 Waste Management Plan	At least 2 months prior to commencement of the activities the operator shall submit in writing an updated Waste Management Plan (WMP) and shall obtain the Environment Agency's written approval to it. The plan must include: Details of abatement measures (e.g. flare with support fuel) for the gas lifting process described in Section 10.8 of the Waste management Plan. The WMP shall be implemented in accordance with the Environment Agency's written approval.
PO 03 Environmental Risk Assessment	At least 2 months prior to commencement of the activities the operator shall submit in writing an updated Environment Risk Assessment (ERA) and shall obtain the Environment Agency's written approval to it. It must include: 1. Update the operating procedure detailing how the propane support fuel will be introduced during the gas-lifting operations used to encourage combustion 2. A written procedure detailing the regular maintenance and inspection of the flare. The operator shall implement the ERA in accordance with the Environment Agency's written approval.

PO 04 Odour Management Plan	At least 2 months prior to commencement of the activities the operator shall submit a written updated Odour Management Plan (OMP) and shall obtain the Environment Agency's written approval to it. The plan must include: 1. Location of release and abatement of the well test spread. 2. Updated details of the use of propane as a support fuel and provide a management system operating procedure detailing: • How propane will be introduced to the flare (engineering approach) • Conditions under which propane will be used (e.g., N_2/CO_2 concentration ranges) • Record-keeping requirements for propane usage 3. Update Section 10.1 Engineering Controls to include the following: • Location of all release points • Points to be abated • Odour abatement technique for each point e.g. reactant type or activated carbon • How abatement techniques will be monitored The operator shall implement the OMP in accordance with the Environment Agency's written approval.
PO 05 Leak Detection and Repair Plan	At least 2 months prior to commencement of the activities the operator shall submit a written 'Leak Detection and Repair Plan (LDRP)', and associated procedures and shall obtain the Environment Agency's written approval to it. The plan will: • Identify, measure, and reduce emissions of volatile organic compounds and other substances released to air, ensuring that activities and operations are in accordance with European standard EN15446 or an equivalent standard • Include regular inspections of wellhead connections and pipes for failures or leaks, • Include routine checks of storage areas for any signs of container degradation, damage, or leakage. The operator shall implement the LDRP in accordance with the Environment Agency's written approval.
PO 06 Surface Water Management Plan	At least 2 months prior to commencement of the activities the operator shall submit in writing an updated Surface Water Management Plan (SWMP) and shall obtain the Environment Agency's written approval to it. The plan must include: 1. A detailed procedure for tanker loading, including details on hose capping for <u>all</u> liquids. 2. A management system procedure that details the parameters to be analysed in the surface water from the containment ditch. 3. A secondary containment plan detailing which tanks, plant, and equipment will be included within the containment and how the containment is to be constructed and identify any plant, equipment or inventory that is to be located outside the secondary containment. 4. A well cellar design detailing how the well cellar will be constructed and connected to the HDPE liner to maintain the integrity of the liner. The operator shall implement the SWMP in accordance with the Environment Agency's written approval.

Table S1.3B Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measure**
PO 07	Prior to any additional phase of well testing or production - Waste Gas Management Plan review	The operator shall submit a review of the Waste Gas Management 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 the 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 also consider in detail all available options, both combustion and non-combustion (including but not necessarily limited to flaring, vapour recovery, scrubbing and adsorption), for the disposal or abatement / mitigation of the waste gas so as to minimise its environmental impacts as far as available techniques allow. The operator shall implement the plan in accordance with the Environment Agency's written approval.
PO 08	At least 2 months prior to commencement of activities referenced AR4 in table S1.1 - Hydraulic Fracture Plan	The operator shall submit to the Environment Agency for approval a written Hydraulic Fracturing Plan and obtain the Environment Agency's written approval to it. The plan shall include but is not limited to: 1. A map showing faults near the well and along the well path, with a summary assessment of faulting and formation stresses in the area and the risk that the operations could reactivate existing faults; 2. Information on the historical seismicity and assessment of the risk of induced seismicity; 3. Summary of the planned operations, including stages, pumping pressures and volumes; 4. The processes and procedures that will be put in place before or during hydraulic fracturing to identify the vertical and horizontal extents of the fractures within the target formation and ensure that they are not near the permitted boundary; 5. In the event that the fractures extend beyond the permit boundary, the steps that would be taken to assess and if necessary, mitigate the effect and limit further propagation outside the target rocks; 6. A comparison of proposed activity to any previous operations and relationship to historical seismicity; 7. Proposed measures to monitor local seismicity during the operations; 8. Proposed reporting during hydraulic fracturing and your proposals for post fracturing reporting of the location, orientation and extent of the induced fractures to demonstrate that the permit has been complied with.
PO 09	At least 1 month Prior to construction of Cloughton 2 wellbore - Pre-groundwater Activity	The operator shall provide written confirmation of the mining waste facility within 1 month of the construction of Cloughton 2 wellbore, provide the actual depths (m True Vertical Depth Subsea) for the proposed phases of hydrocarbon based stimulation fluid / proppant squeeze and shall obtain the Environment Agency's written approval to both.

Schedule 2 – Waste types, raw materials and fuels

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

The storage of hazardous extractive waste is limited to temporary storage in secure containment as part of the collection and transportation of waste from the site. The storage of extractive waste shall not exceed a period of 3 months.

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)	Monitoring frequency	Monitoring standard or method
A1: Gas flare as shown as point A1 in indicative well testing phase plan in Schedule 7	Shrouded Gas flare	Oxides of nitrogen	150mg/m3	Annually	Monitoring method shall be as per monitoring-stack-emissions-techniques-and-standards-for-periodic-monitoring or such other subsequent guidance as may be agreed in writing with the Environment Agency. Monitoring is unnecessary where the flare is active for <10% of the year. Limits are at standard reference conditions. Temperature: 273K; pressure: 101.3 kPa and oxygen: 3 percent (dry gas). Measurement uncertainty shall be calculated in accordance with monitoring stack emissions: maximum uncertainty for periodic monitoring
		Carbon monoxide	50mg/m3	Annually	
		Total volatile organic compounds (VOCs)	10mg/m3	Annually	
A2: Gas scrubber and vent as shown as point A2 on indicative well testing phase plan in Schedule 7	Stock and Surge storage tanks	Gas vented	None set	Monthly	Calculation to determine the quantity of gas vented over the reference period.
A3: Gas knock-out as shown as point A3 in indicative well testing phase plan in Schedule 7					

Table S3.2 Groundwater monitoring requirements				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
GWMBH 1 GWMBH 2 GWMBH 3	*As agreed in line with PO 01	*As agreed in line with PO 01	As approved in writing by the Environment Agency	-

Table S3.3 Discharge points			
Effluent name	**Discharge Point**	**Discharge point NGR**	**Receiving water / environment**
AR3: Discharge of hydrocarbon based stimulation fluid / proppant squeeze to ground via the appraisal borehole for the extraction of hydrocarbons borehole(s) at Cloughton-2 Wellsite	1. 2618 – 2739m 2. 1947 – 2292m 3. 1947 – 2292m 4. 1935 – 1947m	*As confirmed in line with PO 09	Carboniferous sandstones Formation via appraisal borehole
AR4: Discharge of hydrocarbon based stimulation fluid / proppant squeeze to ground via the appraisal borehole for the extraction of hydrocarbons borehole(s) at Cloughton-2 Wellsite	Cloughton-2 Borehole	Surface NGR TA 02090 92815	

Table S3.4 Process monitoring requirements					
Emission point reference or source or description of point of measurement	**Parameter**	**Limit (including unit)**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
For non-enclosed (Non BAT) flares operating as waste incineration.	Hydrogen sulphide in flare gas feed	5.7mg/Nm3	Monthly	As approved in writing with the Environment Agency	
	Flare gas feed flow rate	No limit	Continuous	As approved in writing with the Environment Agency	
	Flare gas combustion temperature	Minimum 800 °C	Continuous	As approved in writing with the Environment Agency	
	Methane in flare gas feed flow	No limit %v/v	Continuous	As approved in writing with the Environment Agency	
	Flare gas composition as required by condition 3.5.7	No limit	Monthly	As approved 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**
Point source emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3	Every month during well drilling, clean-up and testing	1 January
Groundwater monitoring Parameters as required by condition 3.5.1	GWMBH 1 GWMBH 2 GWMBH 3	As agreed in line with PO 01	1 January
Process monitoring Parameters as required by condition 3.5.1	Flare feed gas	Every 3 months	1 January

Table S4.2 Annual production/treatment	
Parameter	Units
Methane Flared	Tonnes
Average Water Cut	% production

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Flare operation	Annually	Hours
Water usage	Annually	Tonnes or m^3
Energy usage	Annually	MWh

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Form air 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Water and Land	Form water 1, WISKI electronic format form or other form as agreed in writing by the Environment Agency	DD/MM/YY
Process chemicals	Form process chemicals 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Energy usage	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	
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	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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 breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) 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.

“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.

“emissions to land” includes emissions to groundwater.

“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 limit.

“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 property” has the meaning in Annex lll of the Waste Framework Directive.

“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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“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.

“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.

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

“Medium Combustion Plant” or ”MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“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.

“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.

“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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“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.

- 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 other than gas engines or gas turbines, 6% dry for solid fuels; and/or
- in relation to emissions from gas engines or gas turbines, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15% 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 plans

Figure 1: General site location plan

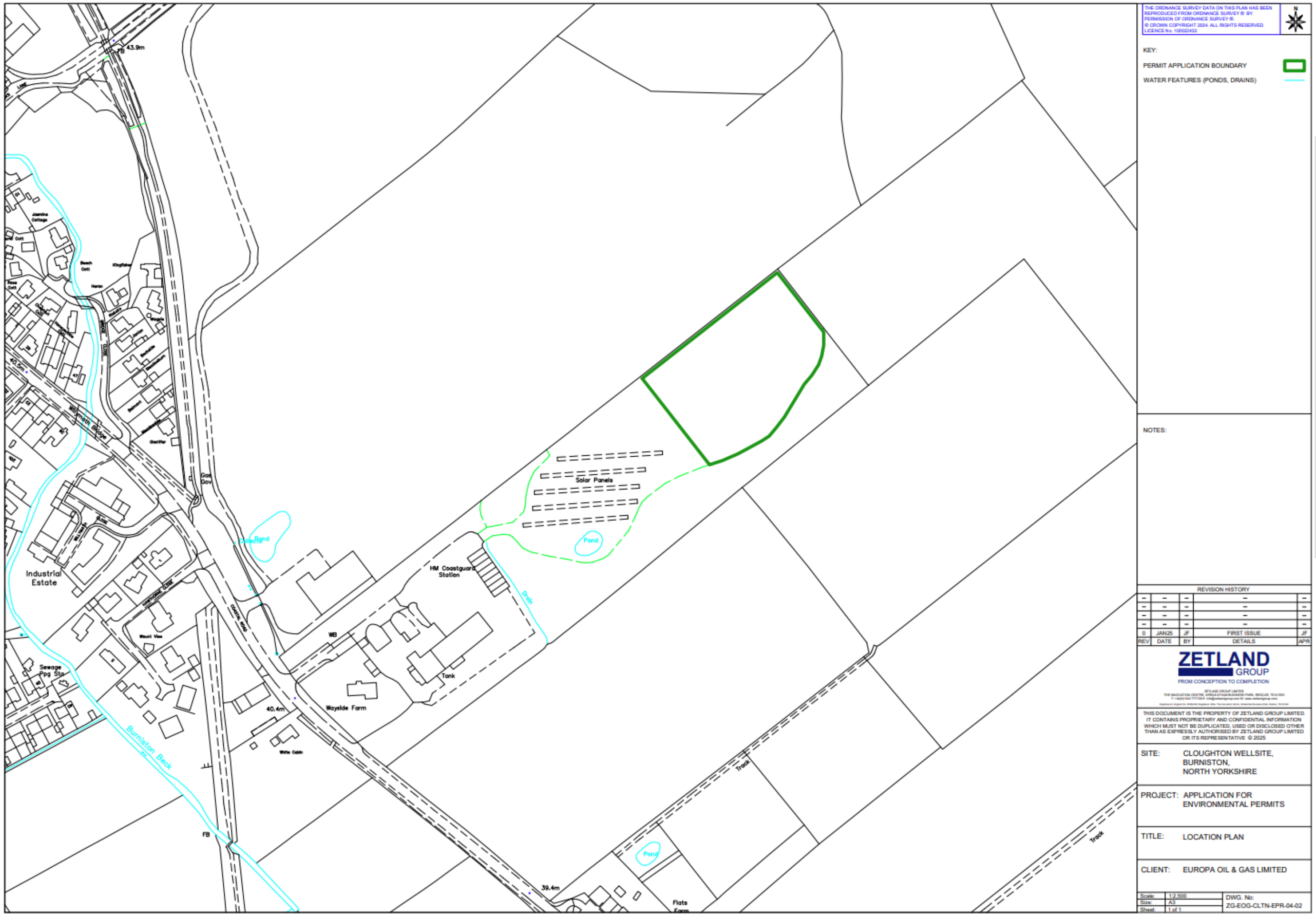


Figure 2: Indicative layout well testing phase with air emission points

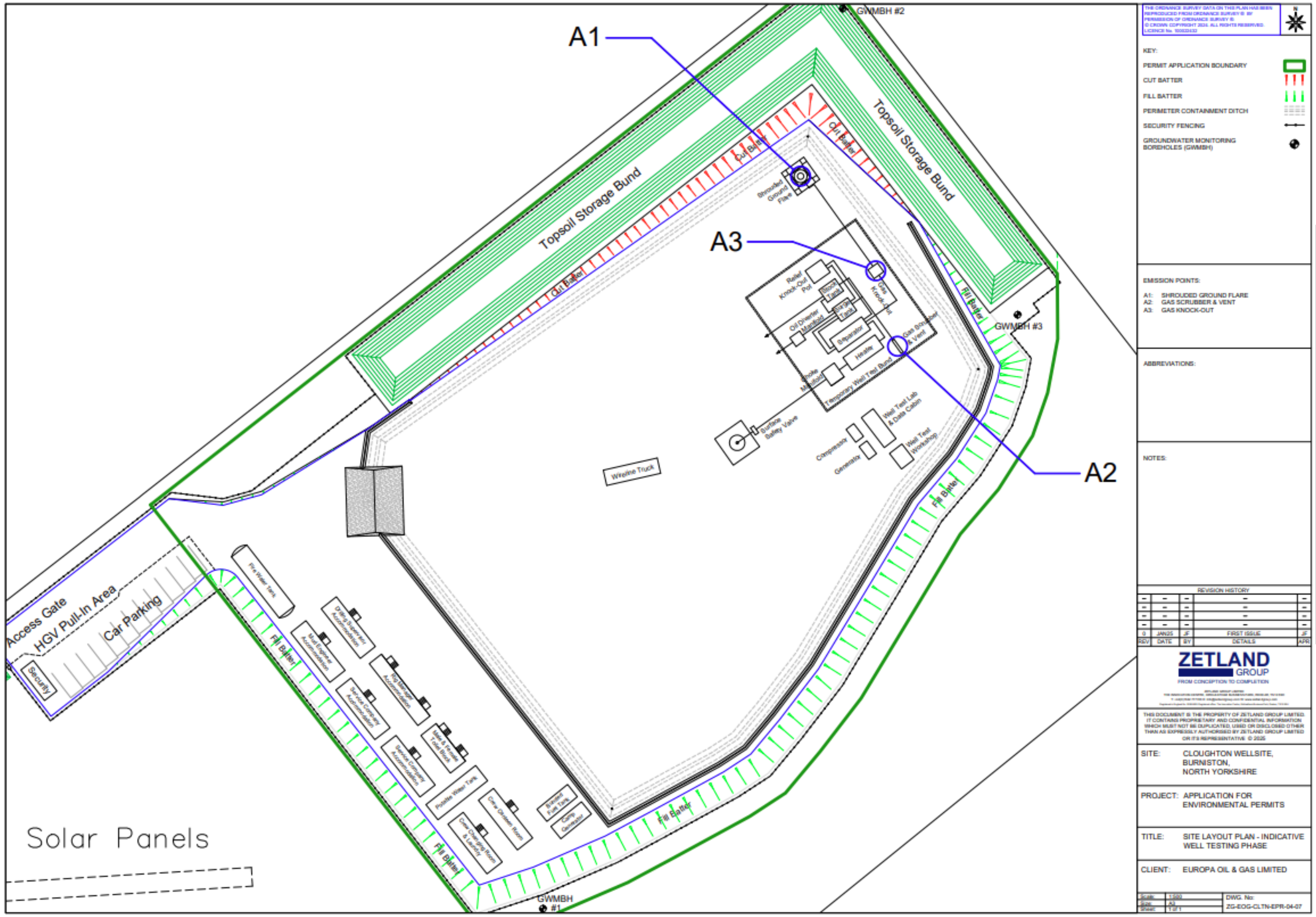
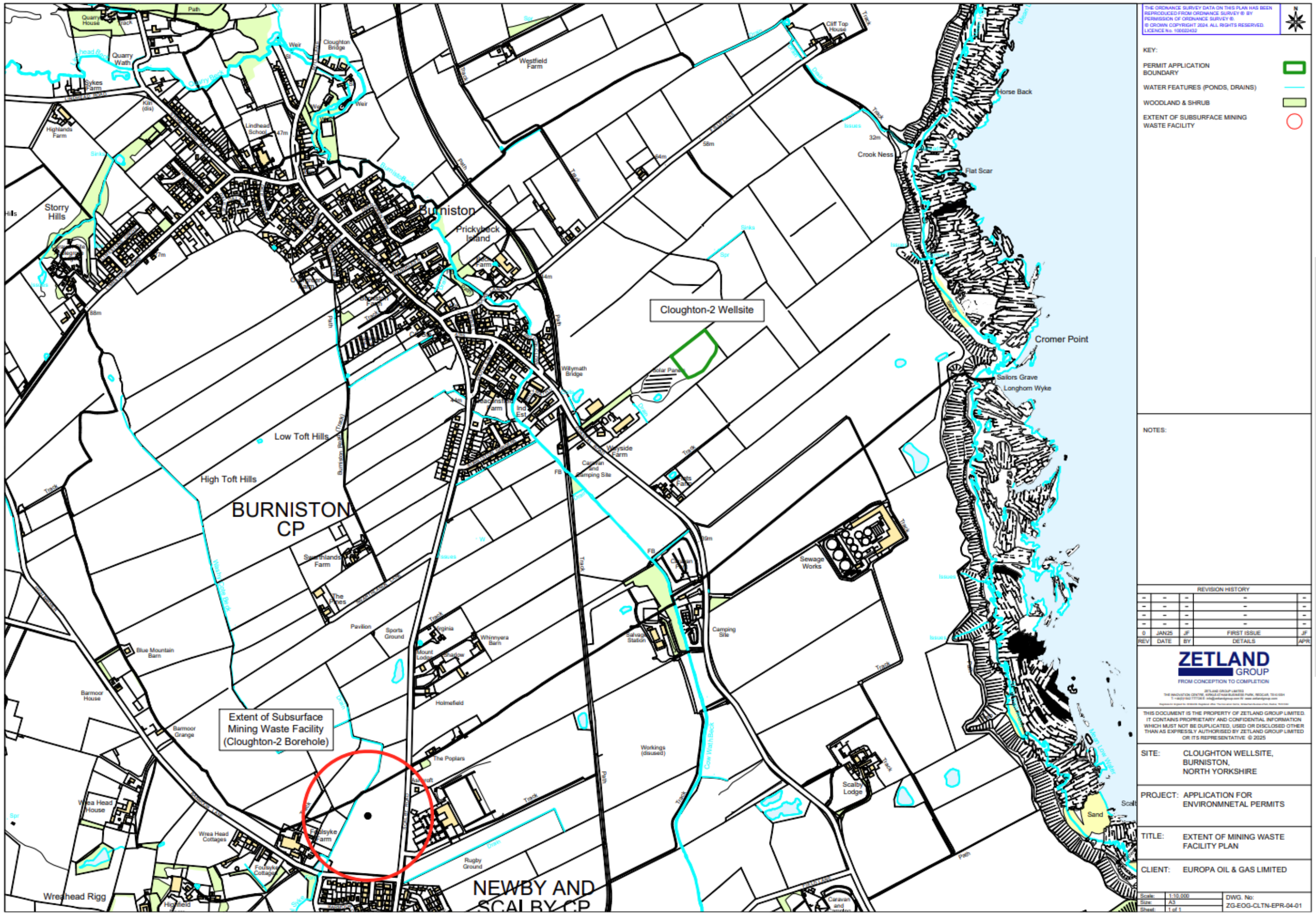


Figure 3: Extent of Mining Waste Facility Plan



END OF PERMIT