

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Europa Oil & Gas Limited
West Firsby Wellsite
Cliff Road
Spridlington
Market Rasen
Lincolnshire
LN8 2DN

Variation application number

EPR/ZP3838RH/V002

Permit number

EPR/ZP3838RH

West Firsby Wellsite

Permit number EPR/ZP3838RH

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.

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

This variation is to add –

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. The permit is being varied to include activities specified in the approved Waste Management Plan and these include management of extractive mining wastes from near well-bore treatments involving acid-squeeze, hot oil wash, and scale removal and well workover operations.

2) A groundwater activity, as defined by the Groundwater Directive and Schedule 22 of the Environmental Permitting (England and Wales) Regulations 2016, as amended, for the re-injection of produced and clean surface water for production support.

The original permit was issued for an Industrial Emission activity as defined by the Industrial Emissions Directive and Part 2 Schedule 1.2 of the Environmental Permitting (England and Wales) Regulations 2016, relating to the loading, unloading, handling and storage of crude oil.

The West Firsby wellsite is located approximately 1.66 kilometres to the west of Spridlington, Lincolnshire. The wellsite was constructed in the mid 1980's and has a total area of 1.88 hectares. The site is situated above a minor aquifer of variable permeability. Seven wells have been drilled at the wellsite. The current status of the boreholes on site are shown in the table below.

Borehole name	Borehole UWID	Spudded	Drilling Operator	Wellbore completion and current status
WF1	L46/18-7Z	15 November 1987	Enterprise	Side-track to WF8
WF2	L46/18-8	27 June 1988	Enterprise	Suspended
WF3	L46/18-9	20 August 1988	Enterprise	Water injection
WF4	L46/18-10	9 November 1992	Tullow	Suspended
WF5	L46/18-14	28 August 1995	Tullow	Side-track to WF7
WF6	L46/18-15	28 September 1996	Tullow	Production
WF7	L46/18-17	17 January 2004	Europa Oil & Gas	Production
WF8	L46/18-19	4 March 2005	Europa Oil & Gas	Suspended
WF9	L46/18-20	15 December 2010	Europa Oil & Gas	Production

The West Firsby wellsite currently facilitates production of oil and associated natural gas. Crude oil, together with admixed reservoir water, is drawn from the wells by way of beam pumps and is passed through a

process heater. Associated natural gas is used to power the water bath heater onsite, with the residual quantity being incinerated via a shrouded ground flare located in the northeast corner of the wellsite. Electricity is supplied from the national grid to the West Firsby wellsite with the main electricity transformer located on the northern perimeter of wellsite. Crude oil produced onsite is stored within 4 x 79,500 litre storage tanks for subsequent transfer to road tankers and removed from site by a licenced haulier to a permitted refinery for sale. Reservoir water is piped from the three-phase separator into one of two separate water storage tanks where it is stored until it is re-injected into the oilfield by way of injection into the on-site water injection well(WF3).

The three operating wells produce approximately 900bbl/day of reservoir water (approximately 52,700m³/annum). About 15-18mscf of gas are produced per day.

The West Firsby Wellsite currently produces approximately an average of 57 bbls/day (approximately 3,337m³/annum) of crude oil. All produced water is re-injected to the oil bearing strata through a water reinjection well located on site.

The principal releases to the environment comprise:-

- a) Emissions of gaseous hydrocarbons from the road tanker by displacement on loading.
- b) Combustion of gas emissions from the gas flare
- c) Clean rainwater from hard surfaced work areas is mixed with produced water and is reinjected together with produced water.
- d) Contaminated waters from the well cellars, bund and other hard surface areas are collected and re-injected to the oil reservoir with produced water via the re-injection well located within the installation.
- e) Engineering waste resulting from maintenance work is removed for disposal at a permitted waste facility

Status log of the permit		
Description	Date	Comments
Application for environmental permit EPR/ GP3639MK /A001	Duly made 10/10/2006	
Additional information	Requested 17/12/2006	Received 31/01/2007
Application determined EPR/ GP3639MK /A001	25/06/2007	Permit issued to Europa Oil & Gas (West Firsby) Limited (EPR/GP3639MK)
Application EPR/ZP3838RH/T001 (full transfer of permit EPR/GP3639MK)	Duly made 02/11/2015	Application to transfer the permit in full to Europa Oil & Gas Limited
Transfer determined EPR/ZP3838RH/T001	07/12/2015	Full transfer of permit complete.
Variation application EPR/ZP3838RH/V002	Duly made 12/01/2017	Application to vary permit as part of permit review
Additional information	30/06/2017	Receipt of GAP analysis tool
Additional information	11/08/2017	Response to Schedule 5 notice
Additional information	18/12/2017	Revised Waste Management Plan
Additional information	17/04/2018	Revised Site plan and clarification of emission points on site
Application ZP3838RH determined	31/05/2018	Permit issued to Europa Oil & Gas UK Limited (EPR/ZP3838RH)

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/ZP3838RH

Issued to

Europa Oil & Gas Limited (“the operator”),

whose registered office is

**6 Porter Street
London
W1U 6DD**

company registration number **03093716**

to operate an installation, a mining waste operation and a groundwater activity at

**West Firsby Wellsite
Cliff Road
Spridlington
Market Rasen
Lincolnshire
LN8 2DN**

to the extent set out in the schedules.

The notice shall take effect from 31/05/2018

Name	Date
Principal Permitting Team Leader National Permitting Services	31/05/2018

Authorised on behalf of the Environment Agency.

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation, and as a result of the application made by the operator.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/ZP3838RH

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/ZP3838RH/V002 authorising,

Europa Oil & Gas Limited (“the operator”),

whose registered office is

6 Porter Street

London

W1U 6DD

company registration number **03093716**

to operate an installation, a mining waste operation, and a groundwater activity at

West Firsby Wellsite

Cliff Road

Spridlington

Market Rasen

Lincolnshire

LN8 2DN

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

Name	Date
Principal Permitting Team Leader National Permitting Services	31/05/2018

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, so far as is 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.

1.1.1 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, 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, 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.
- 2.2.2 The groundwater activity A4 referenced in schedule 1 table S1.1 shall take place at the discharge point marked WF3 on the site plan at schedule 7 to this permit.
- 2.2.3 The discharge shall be made from the wellbore within the Millstone Grit 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 re-injection borehole system shall comply with the following:
- (a) no re-injection borehole shall extend below the depth specified in table S1.1;
 - (b) the re-injection borehole shall comply with the minimum depth below ground level for un-perforated linings specified in table S1.1;
 - (c) the outlet of the re-injection borehole, including any associated diffusers, shall be within the saturation zone at all times;
 - (d) no part of the re-injection borehole system shall be situated within 10 metres of any watercourse (including any ditch that runs dry for part of the year), or any other surface water;
 - (e) no part of the re-injection borehole system shall be situated within a SPZ 1 or 50 metres of a well or borehole used for any purpose, other than abstraction from that well or borehole for the sole purpose of supplying water to the activity specified in table S1.1 and wells or boreholes used solely for purpose of extracting hydrocarbons
- 2.3.4 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

- 2.3.5 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 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.

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 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 to air specified in tables S3.1;
- (b) point source emissions to water and land specified in tables S3.2 and S3.3;
- (c) groundwater monitoring specified in table S3.5;
- (d) process monitoring specified in table S3.6;

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

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), 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, S3.4, S3.5, S3.6, 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; 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 quality monitoring plan specified in Table S1.2, Schedule 1 shall be implemented unless otherwise agreed in writing with the Environment Agency.
- 3.5.10 Any revised groundwater monitoring plan or revised environmental management and monitoring plan should be implemented in place of the original in accordance with the Environment Agency's written approval unless otherwise agreed in writing

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 activities referenced in schedule 1, table S1.1 as A1, 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 (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 activities referenced in schedule 1, table S1.1, as A1, A2 and A4: 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.
- 4.3.8 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.

4.4 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 and waste types
A1	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.	<p>From receipt of production fluids at the wellhead to the despatch of products (crude oil) and waste.</p> <p>Any road tanker loading systems must be fully contained and the delivery system shall be fitted with dry break couplings.</p> <p>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.</p> <p>Provisions shall be made to minimise the emissions of non-methane volatile organic compounds (NMVOC) and methane from the oil storage tank vent.</p> <p>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.</p>
Directly Associated Activity			
A2	Storage of additional raw materials.	Raw materials directly associated with the production of crude oil.	From receipt of raw materials to the despatch for use.
Description of activities for waste operations		Limits of activities	
A3	The management of extractive waste from production activities, not involving a waste facility. The management of extractive waste generated by well workover.	<p>Permitted waste types shall conform to the description in the approved waste management plan.</p> <p>The activities shall be limited to those described in the approved Waste Management Plan referenced EOG-EPRA-WF-WMP-005 and dated 18/12/2017.</p> <p>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.</p> <p>Drilling additives shall be approved in writing by the Environment Agency prior to use.</p> <p>Well stimulation by hydraulic fracturing is not permitted.</p> <p>Flaring of natural gas shall be limited to less than 10 tonnes per day.</p>	

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 and waste types
	Description of activity for Groundwater	Limits of specified activity	
A4	Re-injection of produced water to ground via borehole WF3 for operations for extraction of hydrocarbons.	<p>Discharge of produced water from extraction of hydrocarbons and treated site surface water into existing borehole WF3 at NGR SK98780 84570.</p> <ul style="list-style-type: none"> The target formation for the re-injection is the Millstone Grit Formation. The injection borehole shall not extend deeper than 1730 metres True Vertical Depth below ground level (TVD subGL); Un-perforated linings shall extend to a minimum depth of 1500 metres below ground level. The injection pressure shall not exceed the fracture pressure of the Formation. The discharge shall only be made via perforations in the boreholes which are situated within the Millstone Grit Formation. <p>The activity will be carried out in accordance with the documents specified in table S1.2 and S1.3</p>	

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to section 2.1 and 2.2.	10/10/06
Response to request for additional information reference number 01	Response from the applicant dated 31/01/07	31/01/07
Application	Section 2.1 and 2.2 in Part C2 of the Application form.	Duly Made 12/01/2017
Application	Section 3 of the application document(s) provided in response to section 3a – technical standards , Part C3 of the application form Technical standards detailed in sections 2 of the notice provided under Regulation 60 of Environmental Permitting Regulations.	Duly Made 12/01/2017
Response to Gap analysis tool	All	30/06/2017
Flare technical document	Shrouded flare technical document Revised version 1 dated 04/08/17 and referenced EOG-EPRA-WF-FTD-001	11/08/2017
Non-Technical Summary	Non-Technical Summary referenced EPO-EPRA-WF-NTS-003	11/08/2017
Waste Management Plan	Waste Management Plan referenced EOG-EPRA-WF-WMP-005	18/12/2017
Groundwater Quality Monitoring Plan	Appendix 2 of Site Condition Report EOG-EPRA-WF-SCR-006	11/08/2017
Flare Analysis Report	Appendix 3 of Site Condition Report EOG-EPRA-WF-SCR-006	11/08/2017
Environmental Risk Assessment	Environmental Risk Assessment EOG-EPRA-WF-ERA-007	11/08/2017

Table S1.2 Operating techniques		
Description	Parts	Date Received
Response to Schedule 5 Notice dated 31/05/2017	Response to Schedule 5 notice issued on 31/05/17	11/08/2017
Additional information	Email on clarification of chemicals, techniques, procedures frequency and target formations for radial drilling.	24/10/2017
Site Plan	Site plan referenced EOG-EPRA-WF-SP-004 Revision 2	17/04/2018
Additional information	Clarification on flare operating temperature and injection of collected rainwater	10/05/2018
Secondary and tertiary containment plan as approved under IC1 specified in Table S1.3	All of document	Date of approval of IC1
Leak detection and repair plan as approved under IC2 specified in Table S1.3	All of document	Date of approval of IC2
Environment Management System as approved under IC3 specified in Table S1.3	All of document	Date of approval of IC4
Gas management system improvement plan as approved under IC4 specified in Table S1.3	All of document	Date of approval of IC5
Vapour recovery plan as approved under IC7 specified in Table S1.3	All of document	Date of approval of IC7

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1 Containment	<p>Secondary and tertiary containment</p> <p>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.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	28/02/2019
IC2 Leak detection All permits	<p>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.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	30/11/2018

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC3 Management system	<p>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:</p> <p>Details of the training given to staff on use of spill kits; ensure training records updated accordingly.</p> <p>The procedure to be followed for monitoring the quantity and composition of flow back water and / or produced water and keeping records of the results.</p> <p>The procedures for testing the impermeable membrane and subsequent remediation measures if required.</p> <p>The monitoring procedures and testing in place to confirm the integrity of the re-injection well(s) for the lifetime of those wells, monitoring frequency, remediation measures (and reporting procedures) should the integrity monitoring results indicate that a well integrity failure has potentially occurred.</p>	30/08/2018
IC4 Gas Management	<p>The operator shall submit a written gas management improvement plan and shall obtain the Environment Agency's written approval for it.</p> <p>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, and gas vented during the loading and unloading of road vehicles where relevant.</p> <p>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.</p> <p>The gas management improvement plan shall also refer to the review of emissions undertaken as a result of IC5. If emission limits were not being met, the plan shall include actions that will be taken to ensure that emission limits are met.</p> <p>The plan must contain dates for the implementation of the identified improvement measures.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	30/11/2019
IC5 Air	<p>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.</p>	30/11/2018
IC6 Vapour recovery	<p>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.</p> <p>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.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	30/11/2018
IC7 Surface water	<p>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.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	28/02/2019

Schedule 2 – Waste types, raw materials and fuels

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

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [point 10 on site 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	Less than 10 tonnes per day		Continuous	As approved in writing with the Environment Agency
		Temperature	> 500 ^o C		Continuous	As approved in writing with the Environment Agency

Discharge source and discharge point ref. & location	Parameter	Limit (including unit)	Reference Period	Limit of effective range	Monitoring frequency	Compliance Statistic
Discharge of produced water from oil and or gas extraction to re-injection borehole WF3	Maximum daily discharge volume	1000bbls (159,000 litres)	Total daily volume	N/A	Continuous	Maximum
	Maximum rate of discharge	No limit set	Instantaneous (spot sample)	N/A	N/A	Maximum
	15-minute instantaneous or averaged flow	No limit set. Record as l/s	15 minute	N/A	Continuous	N/A

Effluent Name	Discharge Point	Discharge point NGR	Receiving water/Environment
Discharge of an admixture of Produced water and treated site surface water drainage from oil and gas extraction to re-injection borehole.	Borehole WF3	SK98780 84570	Millstone Grit Formation via injection borehole WF3

Effluent(s) and discharge point(s)	Monitoring type	Monitoring point NGR	Monitoring point reference
Discharge of produced water from oil and or gas extraction to re-injection borehole	Flow monitoring	SK98780 84570	Flow monitoring point

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Borehole BH1A; Borehole BH2A; and Borehole BH3 as shown on site plan in Schedule 7	As specified in Groundwater monitoring plan forming Appendix 2 of Site Condition report as specified in Table S1.2	As specified in Groundwater monitoring plan forming Appendix 2 of Site Condition report as specified in Table S1.2	BS ISO 5667-11:2009 and condition 3.5.3	Three borehole volumes must be purged prior to sampling. Samples must be filtered samples. In accordance with Groundwater monitoring plan specified in Table S1.2

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Reinjection borehole WF3	Well integrity monitoring report	As per the updated written management system specified in improvement condition IC3	As per the updated written management system specified in improvement condition IC3	
Gas to oil ratio of production from the installation	Gas to oil ratio	Monthly	As agreed in writing with the Environment Agency	
Hydrogen sulphide levels in gas in inlets to and outlets from the scrubbing vessels.	H2S	Weekly	As agreed in writing with the Environment Agency	H2S levels in gas scrubbing vessel outlets must not exceed 100 ppm (volume)
Reinjection of produced water to borehole WF3	Process chemicals	Calculated based on chemical usage and fate	Discharge to oil producing reservoirs	Process chemicals

Schedule 4 – Reporting

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

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1 – Gas flare	Every 6 months unless otherwise agreed with the Environment Agency.	31/05/2018
Ground water monitoring Parameters as required by condition 3.5.1	Borehole BH1A; and borehole BH2A shown on site plan in Schedule 7 and as specified in Table 3.5	Every 6 months unless otherwise agreed with the Environment Agency.	31/05/2018
Process monitoring Parameters as required by condition 3.5.1	Description as indicated in Table S3.6	Every 6 months	31/05/2018 for venting of gas and date of approval of IC4 for other specified parameters
Emissions to groundwater (produced water reinjection: total daily volume and rate of discharge) as required by condition 3.5.1 and listed in Table S3.2	Borehole WF3	Every 6 months	1 January, 1 July
Rate of discharge of produced water into borehole WF3	Use reference from monitoring points table	Annually	1 January, 1 July

Parameter	Units
Gas vented	Standard cubic feet
Crude oil production	bbl
Average water cut	% of production
Average Gas to oil Ratio (GOR)	scf gas/bbls oil
Waste gas flared	Standard cubic feet

Parameter	Frequency of assessment	Units
Water usage	Annually	Tonnes or m ³
Energy usage	Annually	MWh
Total mass release of oxides of sulphur	Annually	Tonnes

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	31/05/2018
Water and Land	Form water 1 or other form as agreed in writing by the Environment Agency	31/05/2018
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	31/05/2018
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	31/05/2018
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	31/05/2018
Surface water	Form water W1	25/06/2007
Process chemicals to WF3	Form Process Chemicals 1	25/06/2007
Hydrogen sulphide	Form Hydrogen Sulphide 1	25/06/2007
Annual Production	Form Production 1 or other form as agreed in writing by the Agency	25/06/2007
Total daily volume	WISKI electronic format specified by the Environment Agency	31/05/2018
15-minute flow for reinjection of produced water	WISKI electronic format specified by the Environment Agency	31/05/2018

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 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; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“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.

“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.

“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 III 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

“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, as amended from time to time.

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

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

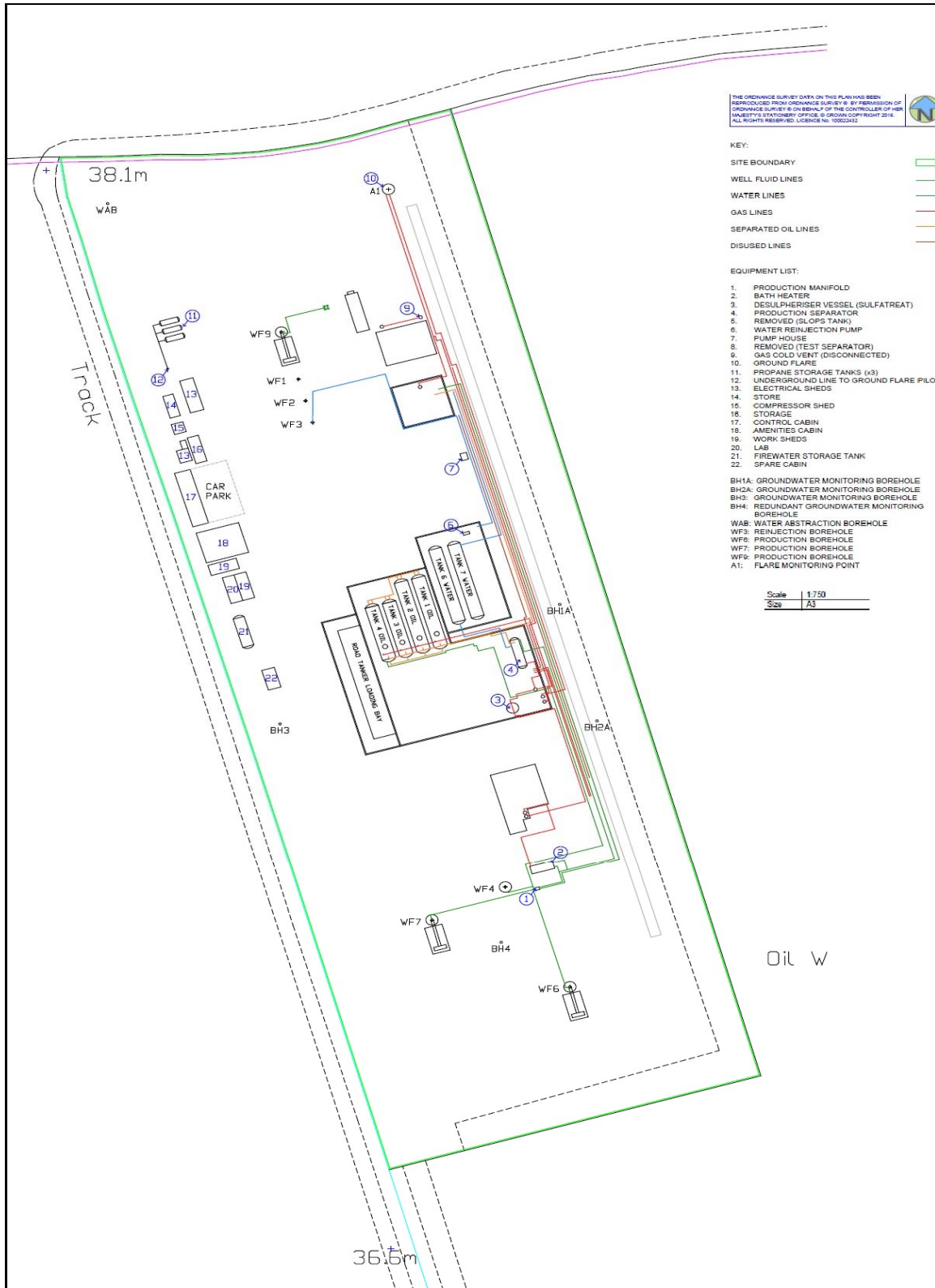
“year” means calendar year ending 31 December.

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 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



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END OF PERMIT

Reporting forms

Permit Number: **EPR/ZP3838RH** Operator: **Europa Oil & Gas Limited**

Facility: **West Firsby Wellsite** Form Number: **Air1 / DD/MM/YY**

Reporting of emissions to air for the period from **DD/MM/YYYY** to **DD/MM/YYYY**

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed Date.....

(Authorised to sign as representative of Operator)

Permit Number: EPR/ZP3838RH

Operator: Europa Oil & Gas Limited

Facility: West Firsby Wellsite

Form Number: WaterUsage1 / DD/MM/YY

Reporting of Water Usage for the year YYYY

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
Mains water		
Site borehole		
River abstraction		
TOTAL WATER USAGE		

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: EPR/ZP3838RH Operator: Europa Oil & Gas Limited

Facility: West Firsby Wellsite Form Number: Energy1 / DD/MM/YY

Reporting of Energy Usage for the year YYYY

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh		
Natural Gas	MWh		
Gas Oil	tonnes		
Recovered Fuel Oil	tonnes		
TOTAL	-		

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: **EPR/ZP3838RH** **Operator:** **Europa Oil & Gas Limited**
Facility: **West Firsby Wellsite** **Form Number:** **Performance1 / DD/MM/YY**

Reporting of other performance indicators for the period [DD/MM/YYYY](#) to [DD/MM/YYYY](#)

Parameter	Units
Total raw material used	tonnes

Operator's comments:

Signed Date.....
 (Authorised to sign as representative of Operator)

Permit Number: EPR/ZP3635MP

Operator: Europa Oil & Gas Limited

Facility: West Firsby WellSite

Form Number: Groundwater1 / DD/MM/YY

Reporting of groundwater monitoring for the period from DD/MM/YYYY to DD/MM/YYYY

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the ‘minimum – maximum’ measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed

Date.....

(Authorised to sign as representative of Operator)