



**Cyfoeth
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Wales

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Sonorex Oil and Gas Limited

Sonorex Exploration Site
Great House Farm
West Nash Road
Nash
Newport
Gwent
NP18 2BZ

Permit number
EPR/NB3593HJ

Sonorex Exploration Site

Permit number EPR/NB3593HJ

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

This permit allows the operator to carry out a mining waste operation for the management of extractive waste not involving a mining waste facility.

For the purposes of flaring, relevant limits for hazardous waste have been included in the permit to reflect the legal waste facility operational limits; above which, the site would be operating as an installation under the Industrial Emissions Directive. (See Table S1.1).

The proposed development is for the drilling of an exploratory borehole for hydrocarbons (conventional oil and gas) to a depth of approximately 4,000 feet.

The development is temporary; and from the initial ground preparation works, drilling and testing to land reinstatement, operations should not last longer than 6 months. The actual drilling operations will last approximately 30 days with a further period of up to 90 days for testing purposes.

This permit does not allow hydraulic fracturing.

Produced water generated as a result of the drilling and testing activities will be tankered off site for the purpose of disposal.

This permit allows point source emissions:

- clean, rainfall dependant drainage from areas of the site not used in connection with the storage and/or treatment of waste, and
- an integral discharge from the permitted activity (areas of the site used in connection with the storage and/or treatment of waste) to surface water via an interceptor.

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/NB3593HJ/A001	Duly made 12/12/14	Application for a mining waste operations without a mining waste facility.
Additional information received	13/03/15	Response to a Schedule 5 notice received.
Additional information received	07/04/15	Response to a Schedule 5 notice - discharge point (national grid reference) details received.

Status log of the permit		
Description	Date	Comments
Additional information received	10/04/15	Amended Site plan showing locations of point source emissions received.
Additional information received	11/06/15	Amended Site plan showing the exact borehole location. Changes to the registered address also confirmed.
Permit determined	30/06/15	Permit issued to Sonorex Oil and Gas Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/NB3593HJ

The Natural Resources Body for Wales (“Natural Resources Wales”) authorises,
under regulation 13 of the Environmental Permitting (England and Wales)
Regulations 2010

Sonorex Oil and Gas Limited (“the operator”),
whose registered office is

Bourse Legal Services
6 Lower Park Row
Bristol
England
BS1 5BJ

company registration number 04309298
to operate a mining waste operation at

Sonorex Exploration Site
Great House Farm
West Nash Road
Nash
Newport
Gwent
NP18 2BZ

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

Name	Date
Holly Noble	30/06/15

Authorised on behalf of Natural Resources Wales

Conditions

1 Management

1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

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

- 1.2.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
 - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
 - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.2.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

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

- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales 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 Natural Resources Wales.
- 2.3.2 The activities shall be operated in accordance with an approved waste management plan, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.3 The operator shall review the waste management plan every five years from the date of initial approval.

2.4 Pre-operational conditions

- 2.4.1 The operations specified in schedule 1 table S1.3A 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 table S3.1.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.

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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.
- 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.

3.3 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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1.
- 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 specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by Natural Resources Wales.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 [S3.3 etc] unless otherwise agreed in writing by Natural Resources Wales.

4 Information

4.1 Records

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

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by Natural Resources Wales, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

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

4.2 Reporting

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

4.3 Notifications

4.3.1 Natural Resources Wales shall be notified without delay following the detection of:

- (a) 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;
- (b) the breach of a limit specified in the permit; or
- (c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

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

4.3.4 Natural Resources Wales 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 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) Natural Resources Wales 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 "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities

Description of activities for waste operations		Limits of activities
A1- Mining Waste Operation	A mining waste operation not including a waste facility for the management of non-hazardous extractive waste (and waste gas should it arise), from exploratory drilling activities for conventional oil and gas.	<p>Permitted waste types shall conform to the description in the approved waste management plan.</p> <p>The activities shall be limited to the extractive waste types provided in the approved waste management plan.</p> <p>Drilling additives in addition to the list provided in an approved waste management plan shall be approved by Natural Resources Wales in writing prior to use.</p> <p>Only chemicals approved in the approved WMP shall be used in the extended well test stage.</p> <p>The storage of extractive waste is limited to temporary storage in enclosed secure containment prior to collection and transportation of waste from the site.</p>
A2- Flaring Activity	D10 : Incineration on land	Flaring activities limited to the waste gas arising from onshore oil and gas exploration and shall not exceed 10 tonnes per day.
Discharge of integral site drainage from the emission (discharge) point indicated on the plan as water discharge point (NGR. ST 3350 8340) in Schedule 7 of this permit.		<p>Run-off from the impermeable surface from all areas of the site used to store and/or treat waste via suitable well maintained Class 1 interceptor to surface water.</p> <p>No visible oil or grease shall be present in the discharge.</p>

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	Environmental Statement – All	31/07/14
Response to Schedule 5 Notice dated 30 th January 2015	<ul style="list-style-type: none"> Amended Drilling Method Statement (WR11) rev.2 – All parts Amended Appendix B: Environmental Statement – All parts Amended – Environmental Statement- Appendix C- List of Chemicals –all parts 	13/03/15
Response to second Schedule 5 Notice – request further information dated- 20 th March 2015	<ul style="list-style-type: none"> Environmental Risk Assessment : SON_ERA 072014 rev.2 part a- All parts Environmental Risk Assessment : SON_ERA 072014 rev.2 – part b- All Sonorex Uskmouth WMP- SON_WMP 062014 rev.3- June 2014- All parts Storage Tank details- Job number: MR398 	07/04/15

Table S1.2 Operating techniques

Description	Parts	Date Received
Horizontal Guidance Note EPR 1 How to Comply With Your Environmental Permit	All	N/A
Technical Guidance Note EPR1 How to comply with your environmental permit: Additional guidance for: mining waste operations- Version 2.0 February 2011	All	N/A
Pollution Prevention Guidelines- PPG 3- Use and Design of oil separators in surface water drainage systems	All	N/A

Table S1.3A Pre-operational measures

Reference	Pre-operational measures
POM1	At least 4 weeks before the commencement of any gas flaring activity the operator shall submit an Air Quality Monitoring Plan to NRW in writing. The Plan shall include - but not be limited to - the details of the baseline air quality study undertaken prior to activities commencing and details of the proposed ambient air monitoring programme during and after the period of gas flaring. The plan shall be approved in writing by Natural Resources Wales prior to operations commencement.
POM2	At least 4 weeks before the commencement of the gas flaring activity the operator shall submit a report including the details of the flare installation. The report shall include but not be limited to; <ul style="list-style-type: none"> • the likely flow rates of gas at the various stages of the exploratory well development • the operational flow range for the flare and the turndown ratio, which is a function of the flare design rather than the flow from the well • what plans are in place should the flow rate of the gas exceed or fall below the flare's flow range • the expected composition of the gas and the plans of complete combustion of contaminants. <p>The report shall include a well control manual and emergency response plan. The plan shall be approved in writing by NRW prior to commencement of flaring activity.</p>

Schedule 2 - Waste types, raw materials and fuels

The disposal or recovery of non-extractive wastes are not permitted activities and there are no restrictions on raw materials or fuels 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	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method
Flare Stack ^{Note1} referenced as flare location on site plan in Schedule 7 of this Permit.	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	-	Continuous	BS EN 14792
	Carbon Monoxide	-	Continuous	BS EN 15058
	Total Volatile organic compounds (VOCs)	-	Continuous	BS EN 12619:1999 or BS EN 13526:2002
	Methane Concentration in flare feed gas	-	Continuous	
	Flare gas feed rate	-	Continuous	
	Flare combustion temperature	-	Continuous	

Note 1: Monitoring of flare emissions is only necessary when the flare operated in excess of 10% of the time

Schedule 4 - Reporting

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

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1. Oxides of Nitrogen Carbon Monoxide Methane Concentration in flare feed gas Total Volatile Organic Compounds (VOCs) including methane	Flare Stack referenced as flare location on site plan in Schedule 7 of this Permit.	Monthly	Date of permit Issue
Flare Temperature Gas Feed Rate	Flare Stack referenced as flare location on site plan in Schedule 7 of this Permit.	As required by Natural Resources Wales	Date of permit issue

Table S4.2 Reporting forms

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by Natural Resources Wales	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	NB3593HJ
Name of operator	Sonorex Oil and Gas Ltd
Location of Facility	Sonorex Exploration Site
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution

To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit

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

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

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

Part B - to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 - Interpretation

“accident” means an accident that may result in pollution.

“Annex I” means Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“authorised officer” means any person authorised by Natural Resources Wales 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.

“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.

“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;
- (e) an area in Wales, the county council or the county borough council for that area.

Whoever has drawn up the emergency plan for that Mining Waste Facility.

“D” means a disposal operation 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 SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

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

“exploration” means activities carried out to provide information about geological structures and the presence or absence of gas reserves together with assessments to determine whether the reservoir development is economically feasible.

“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.

“groundwater protection zones 1 and 2” have the meaning given in the document titled "Groundwater Protection: Policy and Practice" published by the Environment Agency in 2006.

“hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 No.894, the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138), the List of Wastes (England) Regulations 2005 No.895 and the List of Wastes (Wales) Regulations 2005 No. 1820 (W.148).

“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.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“year” means calendar year ending 31 December.

Schedule 7 - Site plan



END OF PERMIT

Permit Number: NB3593HJ

Operator: Sonorex Oil and Gas Ltd.

Facility: Sonorex Exploration Site

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		Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
		Limit Value						
Flare Stack <small>Note1</small> referenced as flare location on site plan in Schedule 7 of this Permit.	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	-						
	Carbon Monoxide	-						
	Total Volatile organic compounds (VOCs)	-						
	Methane Concentration in flare feed gas	-						
	Flare gas feed rate	-						
	Flare combustion temperature	-						

- [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 Natural Resources Wales 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
(Authorised to sign as representative of Operator)

Date.....