



North Sea  
Transition  
Authority

# Petroleum Operations Notice No. 9b - Record and sample requirements for onshore geophysical surveys and wells

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PON9b

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# Contents

Contents.....	3
Introduction .....	4
Geophysical Data .....	5
Well Data .....	6
Data Release Process .....	10
PON9b Data Summary Table .....	11
Contacts.....	12
Annual licence returns .....	14

# Introduction

Please read the Notice fully before sending any information, as it contains changes to earlier editions. Operators are obliged to meet the legislative requirements for data required by both NSTA and the Natural Environment Research Council (NERC). Copies of all well log data should also be sent to the BGS in addition to those sent to UKOGL.

NSTA: The model clauses attached to all licences require operators to retain all the data collected in the course of their operations and to send any or all of this data to NSTA as required. This Notice details NSTA's current data requirements and therefore applies to all onshore geophysical surveys and all onshore exploration, appraisal, and development wells.

NERC: The Mining Industry Act 1926 (section 23) as modified by the Petroleum Act 1998 (section 1) requires Onshore Licensees to give prior notification to the Natural Environment Research Council (NERC) through the British Geological Survey (BGS) of their intention to undertake drilling.

This document contains a summary of requirements, the destination for records and samples, and the timeframe within which the items should be sent together with relevant addresses and details of the process for the release of onshore.

All well operation notifications are now managed using the WONS system. WONS is available through the Oil Portal (<https://itportal.nstauthority.co.uk>). To request portal access, contact the help desk via email - [ukop@nstauthority.uk](mailto:ukop@nstauthority.uk) or telephone 0300 067 1682

Other information required to control onshore operations is the subject of the following Petroleum Operations Notices and Guidance Notes:

Petroleum Reporting is now handled under the PPRS 2000 system accessible from the Energy Portal (<https://www.nstauthority.co.uk/media/5572/oga-pprs-help-guide-v5-april-2019.pdf>)

PON12 - [NSTA well numbering system](#)

PON14b - [Notification of onshore seismic survey](#)

# Geophysical Data

## Proposed Geophysical Surveys

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Operators must advise NSTA and any other parties specified in the licence conditions of all proposed geophysical surveys 28 days before the survey is commenced. The PON 14b form must be used, and the same form used again to report on completion of the survey. In an area known to have coal potential the operator must also, in addition to any planning conditions, consult The Coal Authority before commencing any survey.

## Seismic data

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The UK Onshore Geophysical Library (UKOGL) manages the archiving and release of onshore seismic data for the NSTA. All operators are now required to archive seismic data with UKOGL as soon as it has been acquired. The location of newly acquired data will be made public on the UKOGL website when a survey is finished.

The new data will be kept confidential until it is past the release date, except for the map location of the data acquired which will be posted on the UKOGL website. For the purpose of data release of seismic data, the start of the confidentiality period is deemed to be the end of the calendar year when data acquisition was completed.

For data acquired under onshore licences awarded up to and including the 11<sup>th</sup> round (up to and including PEDL132) the confidentiality period is 5 years. For data acquired under later onshore licences (from PEDL133 on) the confidentiality period is 4 years. For data acquired under an Exploration Licence (LX) the confidentiality period is 3 years.

Archiving with UKOGL absolves an operator from their statutory duty to store such data. The following are the recommended practices for data to be sent to UKOGL:

- Location data: Navigation data in UKOOA format for CDP locations, shot/VP locations and geophone locations.
- Digital field data: Original field format tapes together with one demultiplexed version of the field data in SEG-Y format (original sample rate and record length to be retained and demultiplexed data to be unfiltered and not edited). Test records to be retained.
- Paper acquisition data: all paper data for each line should be stored together and an index provided of the data available e.g. observer's reports, statics, omissions, LVLs, line intersections etc.
- Stack data: Digital versions in SEG-Y for all final stacks and migrations.
- Reprocessed data: Digital versions in SEG-Y for all reprocessed stacks and migrations. All reprocessed navigation data in UKOOA format as above.
- 3D data: UK Onshore 3D seismic survey data can be supplied to UKOGL on either hard disk media (e.g.: USB / NAS drive) or online via secure ftp - contact UKOGL directly prior to supplying any data to confirm accepted submission formats, processes, supporting documentation and to arrange receipt of the data if it is to be supplied on media or for the submitter to be provided with login details if it is to be uploaded via ftp.

The basic required dataset is:

- Pre-Stack Field data: Data should be supplied in either SEG-D or SEG-Y Demultiplexed format files and supported where available with all associated survey acquisition data (including, but not limited to observer's logs, navigation data, test recording files and acquisition reports) - As a minimum, the data supplied should enable a future user to be able to reprocess the original field data in full.
- Gathers: Where available, SEG-Y format shot and CDP Gathers should be supplied with supporting documentation.
- Post Stack Data: All intermediate processing versions in SEG-Y format should be submitted for each survey, but as a minimum, a final migrated version complete with X-Y coordinates, inline and xline values inserted in the trace headers should be submitted.

Supporting processing information should be supplied with the post stack data submission (e.g.: Processing report as a PDF or Word document.)

- Subsequent reprocessing of data is also requested to be submitted.
  - Following submission to UKOGL of the survey data, an operator will only be absolved from their statutory duty to store the data after confirmation by UKOGL that the data has been successfully archived.
- Magnetic, Gravity and other geophysical survey data: This data should be sent ONLY if requested and then within 30 days of the request. The required format/media will be specified with the request.

# Well Data

The following is the information required from all wells. Note that these requirements therefore also apply to all shallow “boreholes” drilled as part of an operator’s exploration and development activities under a Licence including those drilled to test coal seam thickness and gas content, mine water flooding levels etc.

Licensees are reminded that if they wish to make a press release regarding the results of a well, they should send a copy to Head of Onshore E&P for information ([onshore@nstauthority.co.uk](mailto:onshore@nstauthority.co.uk)).

## Data required before and during the drilling of a well

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Application for consent to drill a well is made through the Well Operations and Notification System (WONS) on the UK Energy Portal, and notifications of activity are also made through WONS.

Notification of spud should be at the earliest opportunity, but preferably within two hours of spudding. In the case of Exploration and Appraisal wells, this is deemed to be when the bit has penetrated the ground. For Development wells (or wells where there is a pre-set casing) the notification of spud should be sent within two hours of drilling out of pre-set casing (usually 20") with intent to drill to the reservoir target.

Application for consent to suspend a well, where required, should be made using WONS as soon as possible after the results of the well are known.

Where a well is to be abandoned immediately after drilling, application for consent to abandon should be made using WONS as soon as possible after the results of the well are known.

## Data required on completion of a well

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### Logs

Petrophysical logs including CBL and Image Logs, if acquired, should be supplied within four weeks of completion of the well unless specifically requested earlier. The data must be supplied digitally, preferably on CD or DVD, in an industry standard format i.e. DLIS, LIS, LAS, BIT or API. Associated digital image files of the log data should also be supplied in industry standard image format, such as TIF, JPG, CGM or PDF, but must be OCR readable. All data should be clearly labelled with NSTA Well Registration Number, well name, tool type and run depth range.

Any reprocessed logs such as dipmeters and true vertical depth logs should be sent as soon as they become available. These should also be supplied digitally on CD or DVD. Again, all data should be clearly labelled with NSTA Well Registration Number, well name, tool type and run depth range.

### Geological Composite Log

Within six months of completion of any well including abandonment, or suspension after reaching the first potential producing horizon, the following information must be included on a digital composite log (1:500 scale):

- The NSTA Well Registration Number and well name. The Operator's well number, if different, may be added.
- The Composite Log should integrate the geological columnar section with selected petrophysical logs i.e. a lithology indicating log, a porosity log and a resistivity log.
- The log should indicate all logging and coring intervals, testing intervals and casing/liner seats and it should carry abbreviated information concerning the geology and testing or shows.
- The digital image file can be in TIFF, CGM or PDF format, but must be OCR readable.

### **Data associated with hydraulic fracturing following consent to a Hydraulic Fracture Plan (HFP)**

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Within three months of the end of hydraulic fracturing of a well, the geologic and operational data must be submitted to the NSTA.

Micro-seismic data acquired must be submitted to the BGS.

Also, as for any EWT, a monthly PPRS report is required.

### **Completion report (End of Well Report)**

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Within six months of the completion of any well including abandonment, or suspension after reaching the first potential producing horizon, a completion report must be submitted containing the following information (NOT simply a mudlogger's report) digitally in an OCR readable PDF format.

- NSTA Well Registration Number, well name and the target reference for the well. Where the operator has its own numbering system on fields the alternative number should be included.
- Status of well – i.e. abandoned, suspended, producer, injector or observation.
- Well Chronicle – dates of rig on location, drilling commenced (spud), drilling completed, operations completed and rig off location. Intermediate dates and depths should be included where operations were suspended for any reason prior to end of operations on the well.
- Height of drilling reference point (e.g. KB or RT or RF) above Ordnance Datum (or mean sea level and sea bed together with water depth for “watery areas”).
- Location – National Grid coordinates and relevant latitude and longitude for top hole location.
- Total Depth. If there is significant deviation give TVD of total depth together with bottom hole National Grid coordinates with bearing and distance from top hole location.
- Drilling unit.
- Licence number and round with licence operator.
- Table of geological formations encountered giving depths (MD and TVDSS) and thicknesses (apparent and TVTH). A brief geological description, with significant age determinations and structural information (dips and faults, include true stratigraphical thickness if applicable).
- A listing or log of hydrocarbon indications recorded whilst drilling.
- A record of all cores and side wall cores, intervals and recoveries together with stratigraphical core log, conventional poroperm results and any special core analyses including those to determine petrophysical rock parameters.
- A record of all logs taken (see also above) with brief determinations of porosity and water saturations in reservoirs and potential reservoirs.

- The depths (MD and TVDSS) and results of all repeat formation tests performed in the well. State whether psi(a) or psi(g).
- The depths (MD and TVDSS) and results of all drill stem and/or production tests of the well. Include details of intervals, chokes, rates and/or volumes of hydrocarbons and/or water obtained and their gravities together with pressure and temperatures measured with computer extrapolated reservoir pressure and reference depth. Additionally the results of the test should include perforation details of type, size, density of shots and when applicable details of stimulation such as type, volume, rate, pressures.
- The results of chemical and physical analyses of fluids produced by testing or of minerals found in the well. For CBM wells, also the results of core studies of permeability, desorption, adsorption and gas content.
- Drilling history of the well including mud record, chronological report and as an appendix copies of all drilling reports with the exception of the IADC and other daily reports, clear copies of which should be available on demand to NSTA.
- Details of the well's casings/liners and their seat depths including cement volumes, location of cement tops outside the casings and the method of location. Company/contractors cementing reports and records should be submitted as an appendix. Details of all formation integrity tests whether or not immediately below casing seats are required. Information should be supplied as total pressure versus depth indicating either that leak off has been achieved or that it was a simple limit test.
- The kick-off point of a side-tracked or deviated hole. If the deviation data is requested, it should be submitted in digital format.
- If the well is abandoned or suspended, details of packers, plugs, casing retrieval and site clean-up. A diagram showing all components, cement, perforations and obstructions left in the hole are required.
- If the well is completed, details of packers, subsurface chokes; nipples and safety valves; tubing size, grade weight and pipe thread and well head Christmas tree.
- A completion diagram showing components of the completion, casing strings, cement tops, perforations and obstructions left in the hole is required. Digital log image files can be in TIFF, CGM or PDS format, but must be OCS compatible.

For development wells the following information concerning the reservoir should be in the completion report:

- Reservoir unit tops as depths (MD and TVDSS) and thickness (apparent and TVTH).
- Fluid contacts or limits i.e. gas/oil, or oil/water, or gas/water or lowest known occurrences of hydrocarbon fluids as depths (MD and TVDSS).
- Subsea National Grid co-ordinates of reservoir unit tops and fluid contacts.
- Net pay-thickness (MD and TVDSS) for units and total reservoir. □ Reservoir units average porosities and water saturations.

In addition to the completion report, the following data is also required, within one year, for development or EWT wells, digitally (in a OCR compatible TIFF, CGM or PDS format).

- Results of any significant chemical and physical analysis of petroleum including PVT analyses, water or minerals found in the well or injected into the formation subsequent to well completion report.



- Results of any significant physical analysis carried out on rock samples or fluid from the well including special analyses to determine matrix or fluid parameters subsequent to well completion report.
- Results of any significant tests on production, injection and observation wells including downhole formation pressure and temperature surveys carried out, and also including time, pressure and flow listings of draw down and build-up surveys subsequent to well completion report.
- Any measurements relating to well-head to down-hole pressures (static or flowing) should be reported.
- Details of any changes in perforations or completion hardware or any further operations to stimulate or inject fluids. The TVD or drilled depth of flowing perforation intervals should be reported.
- Details of any other significant changes to the well.

### **Well velocity information**

The results of any velocity surveys and vertical seismic profiling including velocity logs, VSPs and synthetic seismograms, within two months, supplied digitally in a TIFF, CGM or PDF format which must be OCR readable..

### **Samples requirements**

Cuttings samples – representative, washed and dried samples, depth labelled, collected whilst drilling the well at selected intervals. Wherever possible each sample should be at least 100g weight. The collection of cuttings samples in the top hole section of development wells drilled from a single surface location may be waived following discussions with NSTA.

Slabbed cores – from all cores taken as a continuous vertical section comprising at least a width of the core, which will allow standard poroperm plugs to be taken. Any operator wishing to dispose of any other core material after the expiry of five years should inform Head of Onshore E&P via email ([onshore@nstauthority.co.uk](mailto:onshore@nstauthority.co.uk)) giving six months notice in order that their preservation may be arranged if required.

Oil samples – these are no longer required. However, a representative sample of stock tank oil should be retained for 5 years. After this period, any operator considering the disposal of any hydrocarbon fluid samples from discoveries made before the issue of this notice should contact the Head of Onshore E&P via email ([onshore@nstauthority.co.uk](mailto:onshore@nstauthority.co.uk)) to discuss the proposed disposal. A basic sample analysis will be required before any sample is disposed of.

### **Samples from the sea bed (for “watery areas”)**

Portions of sea bed samples and/or cores from boreholes penetrating below the sea bed are required.

Raw data from subsampling released wells will be held confidential for 2 years and interpretative reports for 5 years from the date of sampling. Thereafter copies may be obtained from BGS, subject to the usual procedures for the supply of data.

It will not normally be permitted for a second company to duplicate an analysis at previously sampled horizons. Any subsequent applicant will be expected to sample above or below previous samplers. Where a subsequent applicant has a strong scientific case to duplicate a previously sampled horizon, they may apply to NSTA for authorisation to contact the original sampler, who shall then make the basic analytical results available, either freely after 6 months from the date when they received the analytical results, or at a proportion of the analytical costs, not exceeding 50%, before 6 months from the date when they received the analytical results.

# Data Release Process

## Well data

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NSTA now requires onshore well data to be submitted in digital rather than hard copy format. One copy of the data should be sent to BGS<sup>1</sup> and another to UKOGL (see contacts below). These data will be stored for the confidentiality period specified under the terms of the licence under which the data was acquired. At the end of the confidentiality period, the BGS will release the data on behalf of the NSTA on their website - [Onshore UK Hydrocarbon Well Data](#).

## Seismic Data

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The release of onshore seismic data is through the UK Onshore Geophysical Library ([www.ukogl.org.uk](http://www.ukogl.org.uk)).

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<sup>1</sup> Section 23 of the Mining Industry Act 1926 requires onshore well data to be sent to BGS who will maintain the data and observe the confidentiality period specified by NSTA. Well records and data supplied under this provision are Public Records and the Science and Technology Act 1965 places a duty on BGS to disseminate (subject to confidentiality restrictions) its knowledge in the earth sciences.

# PON9b Data Summary Table

<b>Data Type</b>	<b>Send data to:</b>	<b>Timeframe</b>
Notification of Seismic Surveys (PON14b)	Head of Onshore Exploration and Production – NSTA and UKOGL	28 days prior to survey, and upon completion of survey
Seismic Data	UKOGL	As soon as possible once data has been acquired
Magnetic Gravity & Other Geophysical Data	UKOGL	As soon as possible once data has been acquired, if requested
Application for Consent to Drill	Oil and Gas Portal - WONS	Minimum 21 days prior to drilling
Notification of Spud	Oil and Gas Portal - WONS	Earliest opportunity (within 2 hours where possible)
Well Summary	Oil and Gas Portal - WONS	Prior to Completion, Suspension, or Abandonment of a well
Petrophysical Logs	UKOGL & BGS	Within 4 weeks of completion
Completion Report	UKOGL & BGS	Within 6 months of completion
Composite Log (digital copy)	UKOGL & BGS	Within 6 months of completion
Well Velocity Information	UKOGL & BGS	Within 2 months of completion
Reservoir Information (Development Wells)	UKOGL & BGS	Within 2 months of completion
Hydraulic fracturing report	UKOGL & BGS	Within three months
EWT or Development well test report	UKOGL & BGS	Within three months
Cuttings, Cores & sea bed samples	BGS Keyworth	Within 6 months of completion

# Contacts

Any enquiries regarding this Notice should be addressed to:

Head of Onshore Exploration and Production  
North Sea Transition Authority  
Sanctuary Buildings  
20 Great Smith Street  
London  
SW1B 3BT

Email: [onshore@nstauthority.co.uk](mailto:onshore@nstauthority.co.uk)

The Well Operations and Notification System (WONS) is available through the Energy Portal (<https://itportal.nstauthority.co.uk/>)

To request portal access, contact the help desk on 0300 067 1682 ([ukop@nstauthority.co.uk](mailto:ukop@nstauthority.co.uk)).

Questions on WONS can be emailed to: [WONS@NSTAuthority.co.uk](mailto:WONS@NSTAuthority.co.uk)

## **Well data should be sent to:**

United Kingdom Onshore Geophysical Library c/o Lynx Information Systems Ltd.  
84 Coombe Road  
New Malden  
Surrey  
KT3 4QS

Tel. (020) 8780 2634

Fax. (020) 8780 0931

Email: [contact@ukogl.org.uk](mailto:contact@ukogl.org.uk)

and

The Data Collection Officer  
National Geological Records Centre

British Geological Survey  
Keyworth  
Nottingham  
NG12 5GG

Email: [geodata@bgs.ac.uk](mailto:geodata@bgs.ac.uk) or the Records Centre [ngrc@bgs.ac.uk](mailto:ngrc@bgs.ac.uk)

**Cuttings and cores should be sent to:**

National Geological Repository  
British Geological Survey  
Environmental Science Centre  
Keyworth  
Nottingham  
NG12 5GG

Tel: 0115 9363100

Email: [kwcorestore@bgs.ac.uk](mailto:kwcorestore@bgs.ac.uk)

**Seismic data should be sent to:**

United Kingdom Onshore Geophysical Library  
c/o Lynx Information Systems Ltd.  
84 Coombe Road  
New Malden  
Surrey  
KT3 4QS

Tel. 020 8780 2634

Fax. 020 8780 0931

Email: [contact@ukogl.org.uk](mailto:contact@ukogl.org.uk)

# Annual licence returns

There is at present no requirement to submit an annual licence return in respect of onshore licences.