

Requirements for Submission
of Data to UKBenthos

Resources

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| Rev | Location of changes | Brief description of change |
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| Issue 1 | Initial Document issue | |
| Issue 2 | Throughout document | Review and simplification of document |
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| | | |

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Introduction

UKbenthos is a database containing the results of environmental baseline and monitoring reports carried out on the UKCS by the offshore oil industry since 1975. Through several historical commitments made by Oil & Gas UK members, the *UKBenthos* database has become the sole, readily accessible, source of benthic survey data collected by the oil and gas industry.

This data has significant value in many areas, including:

- Provision of an evidence base to assist with identifying and understanding environmental impacts throughout the offshore installation lifecycle from exploration to decommissioning.
- Publication of the database clearly demonstrates industry commitment to effective environmental management, enhances the profile of the industry and improves transparency.

The database is continuously being updated as Oil & Gas UK members continue to support this initiative and submit data. The information entered into the database should be standardised with a consistent format.

1 Data requirements

Section 2 of this guideline contains details on the provision of data for *UKbenthos*. Oil & Gas UK members are encouraged to provide this guideline to their Seabed Survey Contractor for streamlining the data submission process.

Manual entry, scanning, or converting protected pdf files for entry into the *UKbenthos* carries with it an increased risk of the introduction of errors. The reports should be supplied together with copies of the data preferably as Microsoft Excel files so that they may be directly entered into the database with the minimum of manipulation.

1.1 Data submission

The required data (refer to Section 2) should be submitted to UK Benthos by the following means:

Electronic mail:

Email to: P.F.Kingston@k-aal.co.uk

The data may be submitted on CD or flash drive and sent by post to:

Kingston Ambrose Associates Ltd,
3 Low Causeway,
Torryburn,
Fife,
KY12 8LP

2 *UKbenthos* database contents

Most survey environmental reports already contain the information required for the database. The following is a checklist which can be used to ensure that all the data needed is reported.

A detailed description of the database structure can be found on either the *UKbenthos* disk supplied or the *UKbenthos* distribution package on the Oil and Gas UK's website.

2.1 List of surveys and contents file (PHASE 1 excel file).

This file contains the inventory of surveys, the structure of the file is as follows.

1. Oil Field name
2. Platform name
3. Name of company operating the platform
4. Name of contractor performing the survey
5. Date of survey
6. Date of survey report
7. Latitude of platform
8. Longitude of platform
9. Block number
10. Depth of platform (m)
11. Operational time (0 = preoperational)
12. Most distant site (km)
13. Number of sample stations
14. Number biological replicates
15. Type of biological sampling gear
16. 1 mm or 0.5mm mesh sieve used
17. Univariate statistics used
18. Multivariate statistics used
19. Type of chemical sampling gear
20. IR oil analysis
21. UV oil analysis
22. Gravimetric oil analysis
23. GC oil analysis
24. Analysis of aromatics
25. Number of metals analysed
26. Particle size analysis performed

2.2 Site information and physio-chemical data file (SITECHEM excel file)

This contains positional information on individual sample stations within a survey, sediment physical structure and levels of chemical contamination.

2.2.1 Positional information

1. Year survey was conducted
2. Month survey was begun
3. Sample station identity number given in report, if possible
4. Name of the platform or site of survey
5. Number of the platform or site (where appropriate)
6. Total number of stations sampled in the survey
7. Easting UTM co-ordinate of the sample station
8. Northing UTM co-ordinate of the sample station
9. Easting UTM co-ordinate of the platform or well
10. Northing UTM co-ordinate of the platform or well
11. Latitude of the sample station
12. Longitude of the sample station
13. Latitude of the platform or well
14. Longitude of the platform or well
15. Distance (metres) from platform or well to sample station
16. Bearing from platform or well to sample station (° true)
17. Depth (metres) at sample station
18. Depth (metres) at platform

2.2.2 Sediment type

1. Median grain size of sediment (Phi units).
2. Silt/clay content of the sediment (percentage by weight of the sub 63 µm fraction of the sediment).
3. Organic content of the sediment (percentage by weight of organic material in the sediment).

2.2.3 Total oil content

Sediment hydrocarbon content. All units, apart from Carbon Preference Index (CPI), are µg⁻¹ (ppm). A minus sign indicates a concentration of 'less than' the stated value.

Over the years the analytical techniques for determining total oil content have changed. The following list gives the values that are currently entered into the database and include some that are no longer commonly used.

1. Total hydrocarbon. Values determined by gas chromatography

2. Oil IR. Value determined by infrared absorption.
3. Oil UV. Ultra violet fluorescence spectroscopy using base oil equivalents
4. Oil UV FC. Ultra violet fluorescence spectroscopy using chrysene equivalents
5. Oil Gravimetric Values determined by gravimetric analysis
6. Normal alkane concentration
7. CPI Carbon preference index of n:alkanes

2.2.4 Aromatic hydrocarbons

Aromatic hydrocarbon concentrations in the sediment. All units are $\mu\text{g g}^{-1}$ (ppm). A minus sign indicates a concentration of 'less than' the stated value.

1. Naphthalenes (mw 128)
2. Phenanthrenes (mw 178)
3. Diabenzothiophenes (mw 184)
4. Four ring compounds (mw 202)
5. Four ring compounds (mw 228)
6. Five ring compounds (mw 252)
7. Six ring compounds (mw 276)

2.2.5 Trace metals

Trace metal concentrations in the sediment. All units are $\mu\text{g g}^{-1}$ (ppm). A minus sign indicates a concentration of 'less than' the stated value.

1. "Bioavailable" barium concentrations in the sediment. Barium concentration as given by nitric acid or similar extraction methods.
2. "Total" barium concentrations in the sediment. Barium concentration as given by sodium fusion or similar extraction methods.
3. Cadmium
4. Chromium
5. Copper
6. Nickel
7. Lead
8. Vanadium
9. Zinc
10. Iron
11. Mercury

2.3 Biological indices file (Divers excel file)

Faunal parameters, including diversity indices referring to fauna separated out on a 1 mm and or 0.5°mm sieve.

1. Number of replicates
2. Shannon-Wiener index
3. Simpson's index
4. Brillouin's index
5. Pielou evenness
6. Heip's modification of Pielou evenness
7. Total abundance. Number of individuals in each site
8. Species richness. Number of species in each site
9. Total estimated abundance m²

2.4 Biological Abundance File (Biol excel file)

The file contains the following information:

1. Species name as it appears in the submitted report
2. Species abundance from individual replicate grab samples

The database contains all the identified animals including juveniles and epifauna where they have been distinguished. It uses the following standardised terms in the species listing and Oil & Gas UK members should use these when preparing their reports. The bivalve *Abra alba* is used here as an example in Table 1

Table 1: Example format for species listing

| Example | Meaning |
|---------------------------------|--|
| <i>Abra alba</i> | Identified to species |
| <i>Abra sp.</i> | A single distinct species; species name undetermined |
| <i>Abra sp. 1; Abra sp.2</i> | A number of different distinct species; species name undetermined. |
| <i>Abra spp.</i> | A multispecies grouping belonging to a determined genus |
| <i>Fam., Order., Class etc.</i> | This sequence is also applied using higher taxa (e.g. Scrobiculariidae sp. etc.) |
| <i>Abra alba (juv)</i> | Juvenile of a known species |
| <i>Abra sp. (juv)</i> | Juveniles of standardised terms as above |
| <i>Abra spp. (juv)</i> | Juveniles of standardised terms as above |
| <i>Abra alba?</i> | Identification uncertain (Abra indet.) |



oilandgasuk.co.uk/guidelines

Resources

Resource documents are useful tools developed for specific purposes or needs, and are produced by Oil & Gas UK in partnership with members. As part of the suite of industry-leading guidelines, they draw on a wealth of specialist resources and technical expertise and are continually reviewed to improve the performance of all offshore operations.

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