

Our ref: R/5683_07_Morlyn_Mochras_JFO

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Formal request for a sediment sample plan for Shell Island (Mochras) Lagoon maintenance dredging
REF: PS2606

Dear Chris

1. With reference to your request dated 9 March 2026, for advice regarding sediment sampling for maintenance dredging at Shell Island (Mochras) Lagoon, please find the advice below and a sample plan form attached.
2. ABPmer provides advice to Natural Resource Wales (NRW) on sampling plans to ensure that there is sufficient evidence on sediment quality to understand potential impacts on the marine environment associated with marine licence applications and existing long-term marine licences. This may include characterisation of dredged sediment for disposal at sea or of areas where other activities are likely to lead to the mobilisation of sediments. To enable ABPmer to provide that advice, and to fulfil the UK's obligations under International Conventions in respect of disposal at sea, and the requirements of the Marine and Coastal Access Act where applicable, sediment samples are required for analysis.

Description of the Project

3. Marine licence DML1961 permitted the deposit of 4,000 tonnes of material dredged from Shell Island Lagoon, Afon Artro to Bar Newydd Disposal Site (IS018). The licence start date is 27 February 2020 and the end date is 26 February 2023. This is considered a beneficial use of sediment which adds to the supply of material within the coastal system.
4. The same dredging operation licensed under DML1961 is proposed to take place for works relating to this sample plan request. This involves the removal of maintenance dredge material from Shell Island (Mochras) Lagoon near the inner estuary entrance of the Afon Artro. Dredging will be undertaken using a tracked excavator and three, 25 tonne capacity, tipper trucks. Trucks would transport material to the disposal site via several potential routes.
5. Based on the information provided with the sample plan request, the volume and depth of material that requires dredging is 4,000 m³ and 0.29 m, respectively. The dredge material is likely composed of sand (100%). The coordinates stated in the sample plan request equate to a dredge area of 28,000 m². Maintenance dredging was last undertaken in the summer of 2020.



6. Mr Richard Workman requested a sediment sampling plan on 24 February 2026. This document forms the sediment sampling plan.

Sampling Required

7. In accordance with the recommendations of the OSPAR Guidelines for the Management of Dredged Material¹, which were updated in 2024, samples should be taken to provide a good representation of the volume of material to be dredged. The distribution and depth of sampling should reflect the size and depth of the area to be dredged, the amount to be dredged and the expected variability in the horizontal and vertical distribution of contaminants. We also use the OSPAR guidelines to inform our advice on sampling requirements for other activities which are likely to lead to the mobilisation of sediments. Based on the information submitted (as described above), the following sampling and analysis is required.
8. ABPmer advises that six separate sampling stations (locations) will be required from across the dredge areas to provide adequate spatial coverage. This is in keeping with the guidelines set by OSPAR², which recommend 4-8 stations for dredge areas measuring 10,000-50,000 m². It also allows sufficient coverage of the areas that require dredging. The distribution of sampling should be representative of the spatial extent of the areas to be dredged and evenly distributed.
9. OSPAR guidelines also recommend that samples at depth will be required where the projected depth of dredging is significant, and the volume of dredge material should be taken into consideration to determine the number of samples³. On this occasion, given the small volume of material and limited depth of dredging, samples must be taken at the surface (0 metres depth) as indicated on the sample plan form attached.
10. The following information must be included with any samples (irrespective of the laboratory to be used for analysis):
- Clearly labelled samples;
 - Completed sample position sheet, including the latitude and longitude (decimal degrees and the projection i.e., WGS84) of each location and if core samples are required the depth at which each sample is taken;
 - Details of the method of sampling; and
 - A map/chart detailing the sample locations.
11. Surface samples should be taken from the upper layer of *in-situ* sediment using a non-metallic / stainless steel scoop. To maintain the integrity of the samples please ensure that they are frozen and remain in the freezer until they can be dispatched. Please ensure the samples are dispatched in a cool box - the cool box should not be placed in any other packaging.

Analysis Required

12. Sediment sampling within the dredge area was last undertaken in 2019. Four samples were collected and analysed for particle size, trace metals, organotins, and polycyclic aromatic hydrocarbons (PAHs). Results showed concentrations were low, below Cefas Action Level 1 (where applicable). The material within the samples predominantly comprised sand (97.12% to 98.52%).

¹ <https://www.ospar.org/documents?v=33037>

² OSPAR guidance on number of separate sampling stations (locations) required by dredge area (dredge area (m²) [number of stations (locations)]. <10,000 m² [1-3] | 10,000–50,000 m² [4–8] | 50,000 – 100,000 m² [9–10] | >100,000 m² [extra 5 per 100,000 m²].

³ OSPAR guidance on number of samples required by quantity of dredged material (amount dredged (m³) [Number of sample sites]). Up to 25,000 m³ [3] | 25,000–100,000 m³ [4–6] | 100,000 – 500,000 m³ [7–15] | 500,000 – 2,000,000 m³ [16–30] | >2,000,000 m³ [extra 10 per million m³].

13. Paragraph 6.10b of the OSPAR guidelines state that material may be exempt from testing if it is composed almost exclusively of sand. Exemptions granted under 6.10b should be supported by particle size data.
14. Based on the above, Particle Size Analysis (PSA) is required on this occasion. This is in keeping with the OSPAR guidelines and is recommended to determine if the dredge material composition is consistent with the previous sample analysis and information in the sediment sample plan request. Chemical analysis of the material is not considered necessary, as the material is likely to be coarse in nature and therefore generally less associated with contaminants. As such, it is not anticipated that the material would be significantly contaminated. This is supported by previous chemical analysis in 2019. If the dredge area is found to consist of higher quantities of fine sediment, additional analysis may be required to determine the level of contamination.
15. Further details can be found in Annex 1 (. Sample plan form).
16. It is recommended that the analysis is carried out following established specific dredge material testing methods. A list of laboratories which are approved for the suggested determinands is available at <https://naturalresources.wales/permits-and-permissions/marine-licensing/request-a-sampling-plan-for-a-dredge-or-disposal-marine-licence-application/?lang=en>. Any results following these methods would be acceptable to support a marine licence application or sampling required under an existing marine licence to NRW.
17. To ensure consistency between laboratories it is expected that all analysis required will be undertaken from the same sample container. It is the applicant's responsibility to ensure that sufficient sample is collected, in a single container, for all the analysis required.

Conclusion

18. This advice is based solely on the information provided in the sediment sampling plan request (SP2606) and marine licence DML1961. The sampling and analysis described will be adequate to inform a licence application that mirrors the information in this sediment sampling plan, providing that no further issues come to light and an application is submitted in a suitable timeframe. ABPmer will take a pragmatic approach to the requirement of repeat samples in relation to projects where works have not yet commenced, however, due to the dynamic nature of the marine environment and the potential for changes in the quantity and quality of sediments, there may be a need for some sediments to be re-sampled and analysed if the project has not commenced within two years of the time of sampling.
19. Where long term licences for maintenance dredging will be applied for, additional sampling and analysis may be required throughout the duration of the proposed licence term in order to comply with the OSPAR guidelines. Required sampling will be stipulated in any granted licence.
20. ABPmer reserves the right to request further sampling/analysis should any information come to light that differs from that information submitted in this sediment sampling plan request. Any future request must clearly state this reference number.

Yours sincerely
for ABPmer



Jamie Oaten
Principal Marine Environmental Consultant
ABPmer

Annex 1. Sample plan form

Sample	Station	Metals	Organotins	THC	PAHs	PCBs	PDBEs	OCs	PSA
1	Site A - 0 m	☐	☐	☐	☐	☐	☐	☐	☒
2	Site B - 0 m	☐	☐	☐	☐	☐	☐	☐	☒
3	Site C - 0 m	☐	☐	☐	☐	☐	☐	☐	☒
4	Site D - 0 m	☐	☐	☐	☐	☐	☐	☐	☒
5	Site E - 0 m	☐	☐	☐	☐	☐	☐	☐	☒
6	Site F - 0 m	☐	☐	☐	☐	☐	☐	☐	☒
7		☐	☐	☐	☐	☐	☐	☐	☐
8		☐	☐	☐	☐	☐	☐	☐	☐
9		☐	☐	☐	☐	☐	☐	☐	☐
10		☐	☐	☐	☐	☐	☐	☐	☐
11		☐	☐	☐	☐	☐	☐	☐	☐
12		☐	☐	☐	☐	☐	☐	☐	☐
13		☐	☐	☐	☐	☐	☐	☐	☐
14		☐	☐	☐	☐	☐	☐	☐	☐
15		☐	☐	☐	☐	☐	☐	☐	☐
16		☐	☐	☐	☐	☐	☐	☐	☐
17		☐	☐	☐	☐	☐	☐	☐	☐
18		☐	☐	☐	☐	☐	☐	☐	☐
19		☐	☐	☐	☐	☐	☐	☐	☐
20		☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Stations should be evenly distributed and representative of the dredge areas.