

Tara Higgins

Subject: FW: Monitoring Program for Dredge Samples
Attachments: Analytical reqs for DaS permit_oct2011mfc.doc

From: margot.cronin@marine.ie
Sent: 28 May 2012 12:33
To: Tara Higgins
Subject: FW: Monitoring Program for Dredge Samples

Hi Tara,

Looking at the Shannon Foynes application, the sediment chemistry they are using is from 2008. While the sediment may be essentially only lightly contaminated, Limerick is an urban site and they are looking for a six year permit so really the analysis needs to be repeated. I sent them a new sampling plan last October but I think we may have had a communication problem over whether it was sampling of dredge spoil or dumpsite that was involved. I can't find any mention.

Best regards,
Margot

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Mr Tom Treacey
Shannon Foynes Port Company
Foynes
Co Limerick

17 October 2011

Dear Tom,

Detailed below is a recommended Sampling and Analysis plan for the Foynes and Limerick areas. Nine samples should be taken (as indicated in the drawing files) and analysed as indicated in Table 1 below.

You should provide your sampling contractor with a copy of this plan. I would particularly request that you draw their attention to sections 3 and 4 below, which are fundamental to the quality of the analysis / results.

Should you require clarification on anything, please don't hesitate to contact me.

Apologies again for the delay in replying to you.

Best regards,

M Cronin
Margot Cronin

Shannon Foynes Port Company

October 2011

1.0 Sample location and analyses required:

The following surface samples should be taken. Further sampling and analysis, at depth if necessary, may be required in the event that problem areas of heavy contamination are identified as a result of the initial testing.

Sample No.	Depth	Location Description	Parameters for analysis
1	Surface	Ted Russel Dock	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g
2	Surface	Ted Russel Dock	1, 2, 3, 4a, 4b, 4c, 4d, 4f
3	Surface	Ted Russel Dock	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g
4	Surface	Limerick Approach Channel	1, 2, 3, 4a, 4b, 4c, 4f
5	Surface	Limerick Approach Channel	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g
6	Surface	Limerick Approach Channel	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g
7	Surface	Limerick Approach Channel	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g
8	Surface	Foynes	1, 2, 3, 4a, 4b, 4c, 4f
9	Surface	Foynes	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g
10	Surface	Foynes	1, 2, 3, 4a, 4b, 4c, 4f
11	Surface	Foynes	1, 2, 3, 4a, 4b, 4c, 4d, 4e, 4f, 4g

2.0 Parameter Code:

1. Visual inspection, to include colour, texture, odour, presence of animals etc
2. Water content, density (taking into account sample collection and handling)
3. Granulometry including % gravel (> 2mm fraction), % sand (< 2mm fraction) and % mud (< 63µm fraction).
4. The following determinants in the sand-mud (< 2mm) fraction * :
 - a) total organic carbon
 - b) carbonate
 - c) mercury, arsenic, cadmium, copper, lead, zinc, chromium, nickel, lithium, aluminium.
 - d) organochlorines including γ-HCH (Lindane), and PCBs (to be reported as the 7 individual CB congeners: 28, 52, 101, 118, 138, 153, 180).
 - e) total extractable hydrocarbons.
 - f) tributyltin (TBT) and dibutyltin (DBT)
 - g) Polycyclic aromatic hydrocarbons (PAH) - Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (ghi) perylene, Benzo (k) fluoranthene, Chrysene, Dibenz (a,h) anthracene, Flourene, Fluoranthene, Indeno 1,2,3 – cd pyrene, Naphthalene, Phenanthrene, Pyrene.
 - h) Toxicity tests (Microtox or whole sediment bioassay) using appropriate representative aquatic species. (This requirement will depend on the results of the chemical analyses.)

*where the gravel fraction (> 2mm) constitutes a significant part of the total sediment, this should be taken into account in the calculation of the concentrations.

3.0 Important notes:

- 3.1 Details of the methodologies used must be furnished with the results. This should include sampling, sub sampling and analytical methods used for each determinant
- 3.2 Appropriate marine CRM are to be analysed during each batch of analyses and the results to be reported along with sample results.
- 3.3 The required detection limits for the various determinants are given below.

Contaminant	Concentration	Units (dry wt)
Mercury	0.05	mg kg ⁻¹
Arsenic	1.0	mg kg ⁻¹
Cadmium	0.1	mg kg ⁻¹
Copper	5.0	mg kg ⁻¹
Lead	5.0	mg kg ⁻¹
Zinc	10	mg kg ⁻¹
Chromium	5.0	mg kg ⁻¹
Nickel	15	mg kg ⁻¹
Total extractable hydrocarbons	10.0	mg kg ⁻¹
TBT and DBT (not organotin)	0.01	mg kg ⁻¹
PCB – individual congener	1.0	µg kg ⁻¹
OCP – individual compound	1.0	µg kg ⁻¹
PAH – individual compound	20	µg kg ⁻¹

4.0 Reporting requirements

Reports should include the following information

- 4.1 Date of sampling
- 4.2 Location of samples eg ING or lat/long.
- 4.3 Treatment of samples and indication of sub sampling, compositing etc.
- 4.4 Tabulated geophysical and chemical test results
- 4.5 Completed excel spreadsheet for results
- 4.6 Summary method details
- 4.7 Method performance specifications: Limit of detection, Precision, Bias
- 4.8 Clear expression of units and indication of wet weight or dry weight basis

- 4.9 Blanks & in-house references to be run with each sample batch, and reported with sample results.
- 4.10 Appropriate Certified Reference Materials (CRM) to be run with each sample batch, and reported in full with sample results.
- 4.11 If determinant is not detected, report less than values, and indicate LoD/ LoQ used.
Other quality assurance information (e.g. accreditation status)

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