Eve O'Sullivan

From: margot.cronin@marine.ie
Sent: 24 September 2018 15:39
To: Ciara Maxwell
Cc: Eve O'Sullivan; Noeleen Roche; Terry McMahon
Subject: RE: Material Analysis - Malahide Marina 2018
Attachments: Notes on Malahide _3.pdf

Hi Ciara,

Attached are my comments/obs in relation to Malahide.
If you need clarification on anything, give me a shout.

Best regards,
Margot

From: Ciara Maxwell [mailto:c.maxwell@epa.ie]
Sent: Monday 10 September 2018 15:54
To: Margot Cronin <margot.cronin@marine.ie>
Cc: Eve O'Sullivan <E.O'Sullivan@epa.ie>; Noeleen Roche <n.roche@epa.ie>
Subject: Material Analysis - Malahide Marina 2018

Margot,

Please find attached material analysis results from sampling carried out in Malahide Marina in 2018 in relation to Dumping at Sea application, Reg. No. S0031-01.

This follows the EPA's request for further confirmatory testing of sediments at sample stations MH1, MH2 and MH5, using the requirements for PCB, mercury and pesticides as in the original Sampling and Analysis Plan, further to receipt of your comments, received 21st June 2018 .

The full application can be viewed on our website at this link.

I would appreciate if you could review the data and return any comments to me by **Friday 28th September 2018,** if possible.

Regards,
Ciara

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Marine Institute
Foras na Mara

To: Clara Maxwell, EPA
From: Margot Cronin, MI
RE: Malahide Marina, Dumping at Sea application, 2018
Date: 13 September 2018

Background:
Malahide Marina Ltd. submitted an application for a Dumping at Sea Permit to dredge by Water Injection Dredging (WID) and consequently dispose up to 99 000 tonnes over a seven year period. Sediment chemistry from samples taken in 2017 indicated higher than would be expected levels of some pesticides, PCBs and mercury. The marina was last dredged in 2006. Sediment sampled and tested in 2005 for the previous DaS application indicated that the material was Category 1 (essentially clean) at the time. Results from 2017 showed similar particle size distribution to the 2005 results.

Bearing in mind that WID is being proposed as the method of dredging, MI recommended repeat sampling and analysis at three sample stations. This was carried out in August 2018.

Discussion:
Summary sediment concentrations of key determinands from the original samples taken in 2017, and the repeat samples taken in 2018 are demonstrated in Table 1 below.

Table 1. Sediment chemistry results for key determinands.

Original 2017 analysis			Repeat 2018 analysis		
Sample	Metals	Organics	Sample	Metals	Organics
MH1	Class 1*	PCB028 – low Class 2	MH1	Class 1	PCB – v low Class 2
MH2	Hg – mid Class 2	Not required	MH2	Class 1	PCB – v low Class 2
MH3	Class 1*	Not required			
MH4	Class 1*	Not required			
MH5	Class 1*	HCB – Class 3 Σ DDT - > ERM	MH5	Class 1	PCB – v low Class 2

The original sample MH2 indicated an elevated concentration of mercury. In addition, limits of detection were at the lower action level, and so could not be assessed at the time. The repeat analyses were carried out to lower limits of detection, and all were assessed to be below the lower action limit.

In the original analysis, sample MH5 was found to have hexachlorobenzene (HCB) above the upper action level. This is a very rare occurrence; HCB is rarely detected in marine sediment in Irish waters. The repeat samples were analysed and the concentrations of HCB was found to be below the limit of detection.

The original sample MH5 indicated an elevated concentration of DDT metabolites. The repeat samples showed no DDT metabolites above the limit of detection.

In both the original and the repeat analysis, there is evidence of a low degree of contamination from PCBs. Concentrations are low Category 2, and would not be expected to result in more than very minor impact.

Conclusion/opinion: Of the five samples analysed in 2017, three exhibited some degree of contamination. The results were quite unanticipated when compared to the previous tests and when considering the location. Nonetheless, the QA data provided indicated that these results were correct.

Repeat analysis indicated that, apart from the very low class 2 levels of PCB, the sediment seems essentially clean. Although the repeat analysis results are in line with previous test results and expectations, it is unclear why the results of the initial tests showed higher than would be expected levels of some pesticides, PCBs and mercury. Nonetheless, I'm reasonably confident that the repeat results are correct.

Recommendations:
Given the level of dispersion of sediment associated with WID, bearing in mind previous WID operations in Cork Harbour and taking into account the 2017 chemistry results for this application, MI suggests that it would be appropriate to carry out an actual sediment tracking study for the area prior to start of operations. This should be along the lines of that carried out in Cork Harbour before WID.

MI also agrees that dredging should only be carried out on ebbing tides.