



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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NSY PORTSMOUTH
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August 31, 1998

Mr. Fred Evans
Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

re: Proposed Sampling and Analysis Program for Interim Offshore Monitoring for OU4
at Portsmouth Naval Shipyard, Kittery, ME, July 21, 1998.

Dear Fred,

The Maine Department of Environmental Protections has reviewed the document
referenced above. The Department's comments follow:

The subject plan is for sampling to determine whether concentrations of site-related
contaminants in offshore areas of the Portsmouth Naval Shipyard (PNSY) meet remedial
action objectives. The remedial action objectives are essentially to protect aquatic
species against potential adverse effects from exposure to chemicals of concern (COCs)
in sediments adjacent to the site. Additionally, sampling is proposed to fill data gaps for
developing preliminary remediation goals (PRGs).

The document provides only a general description of the proposed sampling plan. As
such, it raised the few general questions discussed below. Several specific questions
follow the general questions.

General Comments

1) In areas with sediments, mussels will be collected to "confirm the comparability
between sediment and mussel tissue results." According to the plan, mussel contaminant
levels will be converted to sediment-based values using bioaccumulation factors (BAFs)
for inorganic contaminants and biota-sediment accumulation factors (BSAFs) for
organics. It is generally understood that the BAF relates contaminant levels in biota to
those in water and food (in this case, suspended particles), whereas the BSAF relates
contaminant levels in biota to those in the sediments. Questions about this process
follow.

a) The purpose for converting contaminant levels in mussel tissue to sediment-based
values is not clear. It appears that efforts will be made to compare contaminant levels in

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mussels with sediment porewater PRGs. This is not necessary because the plan already includes collection and chemical analysis of sediment and, perhaps porewater (see comment 3). The comparison is also considered inappropriate for reasons discussed in comment "c" below.

b) Why is the BAF being used for inorganics, whereas the BSAF will be used for organic contaminants? If accumulation factors are used (see comment 2c), the selected accumulation factor (BSAF or BAF) should be used consistently for all contaminants.

c) Details on mussel sampling were not provided. The MEDEP assumes that, consistent with previous studies, *Mytilus edulis* will be the species of choice for monitoring. This species does not typically dwell in sediments. As a result, contaminant levels found in *M. edulis* are more likely to reflect an equilibrium with contaminant levels in the overlying water than with those in sediment porewater, upon which PRGs will be based. Whether the nature of filterable particles in the water column is the same of that at the sediment-water interface is also uncertain. Mussels collected for the proposed monitoring may be in close proximity to the sediments and there may be mathematical functions that can be used to relate surface water chemistry to porewater chemistry. Whether such is the case was not discussed. Absent the information in question, BSAFs/BAFs relating contaminant levels in mussels to those in sediment/porewater are considered to be of limited value.

2) It is noted that sediments will be analyzed for COCs, total organic carbon (TOC) and acid volatile sulfides:simultaneously extracted metals (AVS:SEM). Sediment grain size should be characterized as well. Porewater concentrations of COCs should be measured, rather than estimated.

3) The Navy states that reference sampling locations were selected to determine regional concentrations of contaminants in parts of the Piscataqua River where sediments have basic characteristics similar to those near PNSY. To do so, reference stations were selected at locations downstream of other industrial inputs. Sampling in such areas helps to identify other potential sources and loadings of COCs to the system. This approach will not provide a measure of average background contaminant levels in the system, therefore will be of little use in efforts to distinguish those areas that are specifically influenced by site-related contaminants.

4) Table 8-2 of the Revised Draft Final EERA lists several "essential monitoring studies" that are not included in the present monitoring plan, e.g., "monitor benthic community to assess trends." Please explain why these studies were not included in the present monitoring plan.

Specific Comments

5) What to Sample, p. 1 para 5

"Surface water data, collected as part of Phase I and Phase II sampling rounds for the Estuarine Ecological Risk Assessment (EERA), showed concentrations below the water quality criteria (NCCOSC, 1997)...Therefore, preliminary RAOs for surface water are being met and monitoring surface water is not included as part of the interim monitoring."

a) Please include the reference for NCCOSC, 1997.

b) According to the Revised Draft Final EERA, "Because the analytical methods used for Phase I water samples did not meet data quality objectives, Phase I water samples were not used to estimate surface water exposure point concentrations." Therefore, the reference to Phase I sampling rounds should be omitted from the above sentence.

c) According to the Revised Draft Final EERA the only inorganics analyzed in the Phase II sampling round were lead, cadmium, nickel, and copper. This doesn't include the other metals commonly analyzed for, namely, aluminum, silver, arsenic, chromium, iron, manganese, and zinc nor does it include mercury. The Ambient Water Quality Criteria (AWQC) for many of these metals was exceeded in seeps flowing into the river. Although there is certainly a large degree of dilution of seep water, how is the Navy confident that these other metals are below the AWQC in the river?

6) What to Sample, p. 2 para 2

"For the development of interim PRGs, data needs include co-located data for porewater, bulk sediment/toxicity, and mussel and/or juvenile lobster...Additionally, sediment porewater and juvenile lobster will be sampled and analyzed as part of PRG data needs."

The latter sentence appears to be redundant. Please delete.

7) What to Analyze, p. 2 para 4

"Analysis for chemistry includes chemicals of potential concern (COPCs) for OU4; including metals, polychlorinated biphenyls (PCBs), and total polyaromatic hydrocarbons (PAHs)."

According to the Seep and Sediment Data Package for Round 10, 4,4'-DDT was detected above the NOAA Effects Range-Low at all the sediment locations sampled and was detected above the NOAA Effect Range-Median at 11 of the 13 sediment locations sampled. Regardless of whether or not DDT has been related to a specific onshore PNS site, the MEDEP believes that this contamination needs to be addressed. At a minimum,

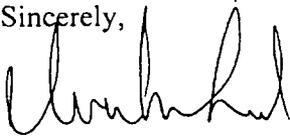
the Navy should develop Preliminary Remediation Goals for DDT and monitor the chemical as part of this monitoring plan.

Conclusion

Overall, the document under review provided a general description of the sampling that is planned. As such, it raised only a few questions that may simply need further explanation to be addressed. The selection of reference sampling stations may require further discussion. More questions may arise as details on methods for sampling, chemical analysis and data analysis become available.

Please feel free to contact me at (207) 287-8010 if you have any questions.

Sincerely,



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Project Manager
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