Brown & Root Environmental

55 Jonspin Road
Wilmington, MA 01887-1062

Phone. (508) 658-7899
FAX (508) 658-7870

C-52-7-6-3197W

July 26, 1996

982

Project Number 4725

Mr. James Shafer
Remedial Project Manager
Northern Division, Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, Pennsylvania 19113

Reference: CLEAN Contract No. N62472-90-D-1298
Contract Task Order No. 0197

Subject: Minutes to The Eighth Ecorisk Advisory Board Meeting

Dear Mr. Shafer:

Enclosed please find the Minutes to the Eighth Ecorisk Advisory Board Meeting, which was held on July 18, 1996 as recorded by B&R Environmental. These minutes document the agreements reached at the meeting, and the basis for those agreements.

If you have any questions about this material, please do not hesitate to contact me.

Very truly yours,

Stephen S. Parker
Project Manager

SSP/ib

Enclosure

c: B. Wheeler, NETC Newport (4) (w/encl)
K. Keckler, USEPA (w/encl - 2)
P. Kulpa, RIDEM (w/encl - 2)
K. Finkelstein, NOAA (w/encl -1)
T. Prior, US F&W (w/encl - 1)
J. Trepanowski/M. Turco, B&RE (w/encl)
File 4725-3.2 (w/o encl), 4725-8.0 (w/encl)

MINUTES OF THE EIGHTH ECORISK ADVISORY BOARD MEETING
NAVY INSTALLATION RESTORATION PROGRAM
NAVAL EDUCATION AND TRAINING CENTER (NETC)
NEWPORT, RHODE ISLAND

July 18, 1996

BROWN & ROOT ENVIRONMENTAL
CONTRACT NO. N62472-90-D-1298
CONTRACT TASK ORDER NO. 0173

Prepared by:
Mr. Stephen S. Parker
Project Manager

Prepared for:
Mr. Jim Shafer
Remedial Project Manager
U.S. Navy, Northern Division

MINUTES OF THE EIGHTH ECORISK ADVISORY BOARD MEETING
July 18, 1996

The eighth meeting of the Ecorisk Advisory Board (EAB) for Naval Education and Training Center (NETC) sites was held in Building 1 of the NETC in Newport, Rhode Island, on July 18, 1996. The meeting was held in order to: 1) Discuss issues related to the sediments eroded from the shore of McAllister Point Landfill (including the proposed re-sampling effort) and clarify some of the review comments to the Draft Final baseline marine ecological risk assessment (ERA) report for the site; and 2) Discuss (*time permitting*) the review comments to the Draft Final Work Plan for the baseline marine ERA for the Old Fire Fighting Training Area (Addendum C of the "Master" Work Plan), present the results of the hydrographic survey, and reach final agreement on the location of sampling stations.

The minutes of the meeting are included below, followed by three attachments: Attachment A presents a list of meeting attendants; Attachment B presents the meeting agenda; Attachment C presents a memorandum and other handouts distributed at the meeting. The main focus of this meeting minutes is on presenting the items on which consensus was reached after general discussion, without necessarily relating in detail the discussions that lead to the consensus.

I INTRODUCTORY REMARKS

At approximately 9:30 am, Jim Shafer (Navy) initiated the meeting and referred to the meeting agenda. Mr. Shafer then stated the general goals of the meeting.

II McALLISTER POINT LANDFILL (MPLF)

Mr. Shafer (Navy) explained that Brown & Root Environmental (BRE) had prepared a memorandum to identify if review comments to the Draft Final baseline marine ERA for the site would be addressed or needed to be discussed at the meeting. The memorandum was distributed to the attendants, and Mr. Shafer explained the organization of the information in the memorandum. Mr. Shafer indicated that the two main issues identified from the comments were related to 1) the eroded sediments and 2) the approach used in the risk characterization; he explained that these issues would be discussed first and then remaining specific issues would be discussed afterwards. Mr. Shafer acknowledged the need to conduct additional sediment sampling and possibly toxicity testing for the site; then he expressed that it was the Navy's intention to salvage the baseline marine ERA report, and referred to the general schedule for the whole RI/FS process for the site. Mr. Shafer proposed to finalize the ERA report and conduct the additional sampling and testing as part of a long-term monitoring program for the site, which would also provide information for the feasibility study.

> *Kymberlee Keckler (EPA) said she did not think the baseline ERA report could be salvaged because the conditions at the shore have changed. Susan Svirsky (EPA) indicated that the sediments at the shore of the landfill are gone and that hydrodynamic conditions have changed because of the revetment.*

Brad Wheeler (Navy NETC) commented that maybe it was necessary to determine the fate of the eroded sediments to assess the long-term effects of the ocean on the landfill cap and revetment.

Liyang Chu (BRE) indicated that the previous RI for the site addressed the nature and extent of contamination before the capping of the landfill and the placing of the revetment along the shore. Mr. Chu indicated that the additional sampling being discussed could be used within the feasibility study to address the issue of landfill leachate potentially still existing after cap construction. Mr. Chu proposed finalizing the RI for the site based on the existing data in the baseline marine ERA report.

Kymberlee Keckler and Susan Svirsky (EPA) indicated that it was necessary to determine the current risk (i.e., after revetment construction) and document it in the ERA and future RI report, and that based on the presence or absence of an actionable risk it would then be determined if remediation and a feasibility study for the site were necessary.

General discussion ensued involving representatives from EPA, NOAA, RI DEM, Navy, BRE and SAIC regarding alternatives to comply with regulatory requirements and still be able to utilize the Draft Final baseline marine ERA report for the site. Hector Laguette (BRE) proposed to leave the Draft Final ERA report as is for the time being until the additional sampling and testing have been completed and results are available; at that time, qualitative comparisons of the results with those presented in the Draft Final report could be conducted. Mr. Laguette explained that if current contaminant concentrations in the sediments are determined to be below the concentrations previously detected as presented in the ERA report, then the new information and the qualitative comparison of the results could be included in the report as an addendum or an additional section of the report, and then the report could be finalized, provided that any other outstanding issues from review comments were also addressed. Mr. Laguette also indicated that if current contaminant concentrations are determined to be greater than previously measured concentrations, it would then be necessary to discuss how to proceed, and that in such instance efforts should probably be focused on accurately assessing the current risk instead of finalizing the Draft Final ERA report.

Susan Svirsky (EPA) agreed with this proposed approach for dealing with the Draft Final ERA report and the information from the future additional sampling and testing, and indicated then that work for the site could move forward as a focused feasibility study for the sediments.

Break at 10:25 am; reconvened at 10:50 am.

Jim Shafer (Navy) asked Paul Kulpa (RI DEM), who had arrived to the meeting shortly before the break, if he had any questions or specific concerns.

Paul Kulpa (RI DEM) asked if the Navy would cleanup the surface of the beach off of the MPLF.

Stephen Parker (BRE) indicated that OHM had removed all the debris that was visible on the beach at the time of the revetment construction, but new debris surfaced after the construction of the revetment and the apparent erosion of sediments.

Paul Kulpa (RI DEM) indicated that the State's original position was not to fill-in the beach/shore, and indicated that he would want the Navy to determine, with the use of borings, the seaward extent to the toe of the landfill.

Brad Wheeler (Navy NETC) indicated that the State appeared to be concerned about the following issues: how to address the surface debris, what is the seaward extension of the landfill, and the possible extension of the revetment.

Kymberlee Keckler (EPA) indicated to Mr. Wheeler that the EPA was not involved with the decision about extending the revetment; if the toe of the landfill extends into the bay, the Navy will need to resolve this issue with the RI DEM. Paul Kulpa (RI DEM) then indicated that it was necessary to determine the extent of the landfill into the bay because this would affect the decision as to whether extend the revetment and, if so, how far; Mr. Kulpa acknowledged that volume determination of landfill material was not the objective.

Stephen Parker (BRE) indicated that thickness of the landfill material could be determined at the shoreline, and then further thickness determinations could be made to identify the outward extent of the landfill material.

Paul Kulpa (RI DEM) cautioned that "refusal" during boring should be confirmed to be bedrock, and referred to the problem of previous TRC determinations which were interpreted to be bedrock when they were actually fill material.

Consensus was reached on determining the areal extent of the landfill into the bay.

Simeon Hahn (Navy) referred back to the issue of the fate of the eroded sediments, and whether it would be necessary to try to determine where they may have migrated.

Kymberlee Keckler (EPA) indicated that it was not necessary to precisely determine where the eroded sediments migrated to, unless the Navy was already aware of specific depositional areas that may have potentially been recipients of the sediments; Ms. Keckler indicated that a greater priority is to re-sample the nearshore area to determine current contaminant concentrations in the sediments.

Simeon Hahn (Navy) indicated that the Navy would like to finalize the Draft Final ERA report, which he considers indicates that no substantial risk was washed away when the sediments were eroded.

Kymberlee Keckler and Susan Svirsky (EPA) indicated that the current Draft Final ERA report cannot be finalized. Ms. Svirsky then commented that she understood the Navy's interest on finalizing the Draft Final ERA report to allow for it to be used as the basis for the qualitative comparison with the future additional sampling results.

General discussion ensued. It was agreed to discuss the risk characterization of the Draft Final ERA report in order to reach consensus on the approach to "finalize" this section of the report without finalizing the report itself. Consensus was reached that the report will remain as Draft Final until the new analytical data is available and the qualitative comparison to the previous data can be incorporated as an additional section of the report. Consensus was also expressed that "long-term monitoring" can be considered to be a remedial action for a site, while "no action" does not constitute a remedial action.

Kymberlee Keckler and Susan Svirsky (EPA) indicated that remediation recommendations should all be deleted from the risk characterization section and the report itself, as such recommendations pertain to the realm of risk management.

Greg Tracey (SAIC) explained the risk characterization approach followed in the Draft Final marine ERA report; Mr. Tracey explained the endpoints used and the prioritization of risk.

Susan Svirsky (EPA) commented that in her opinion the scales used in the summary of weights of evidence are not comparable among all of the endpoints, and referred to the scale used for porewater exceedances of Ambient Water Quality Criteria (AWQC) as an example; Ms. Svirsky indicated that, in relation to benthic organisms, a concentration in excess of the chronic AWQC should be considered as "++", while in excess of the acute AWQC should be "+++". Bob Richardson (RI DEM) then commented that he still had some reservations about the scale used in the interpretation of statistical significance and percent reduction from control for the results of toxicity tests.

Greg Tracey (SAIC) acknowledged that the multiple weights of evidence used in the ERA are based on qualitatively different types of information which are not necessarily directly comparable to each other with regards to the magnitude of risk that they

characterize. Mr. Tracey then responded to Bob Richardson that the current interpretation of the toxicity test results was supported by the documentation that Mr. Tracey had previously provided to Mr. Richardson presenting a "power curve" of the statistical analysis of the results and the ability to recognize "beta"-type error.

Susan Svirsky (EPA) indicated that EPA Region I disagrees with the categorization of risk by Suter et al., *1995, which was used in the Draft Final marine ERA report. Ms. Svirsky requested that the use of such categorization of risk be eliminated from the report, and indicated that terms such as "low", "intermediate" and "high" risk should be used instead, as part of a "sliding scale" of relative risk based on comparisons among the various zones within the study area.*

General discussion ensued. Consensus was reached in that the Overall EEZ Risk categories used in Table 7.1-1 of the report would be revised in the following manner: moderate = high; slight to moderate = intermediate; slight = low; and minimal = baseline. Agreement was also reached in that the use of the asterisk qualifier for weight of evidence from the SEM bioavailability and toxicity test endpoints would be carried over into Table 7.1-1 of the report.

Bob Richardson (RI DEM) expressed, as a general comment, that in his opinion there is still some disagreement between the benthic community data and the interpretation of such data in the risk characterization of the Draft Final marine ERA report. Mr. Richardson stated he did not think it was necessary for him to identify specific issues with which he disagrees, as was previously requested by Greg Tracey (SAIC) and suggested by Susan Svirsky (EPA). Mr. Richardson stated, as a general comment, that the interpretation of the benthic community data should be in better agreement with the presence or absence of stress-tolerant benthic species. Mr. Richardson commented that he feels there is a disagreement between the interpretation of the benthic community data by the original field investigator and that presented in the Draft Final marine ERA report.

Greg Tracey (SAIC) indicated to Mr. Richardson that the interpretation of the benthic community data by the field investigator and that in the report were one and the same.

Bob Richardson (RI DEM) said he remained in disagreement with the interpretation of the benthic community data in the report.

General discussion of the issue of additional sampling in the study area ensued, with participation from the representatives from NOAA, RI DEM, EPA, CDM, Navy, BRE, URI and SAIC. The following agreements were reached:

- Using an overhead of Figure 6.6-1 of the Draft Final marine ERA report, consensus was reached in that the following zones and specific stations would be sampled for surface sediments: stations in Zones 1, 2, 3 and 4; Station S2B from Zone 3A; Station M1 from Zone 5; and Stations MCL-13 and MCL-14 from Zone 6.

- Consensus was reached on the following list of target analytes: PAHs, PCBs and metals. Consensus was also reached on conducting grain size and TOC determinations for the sediment samples. It was agreed that SEM/AVS determinations will not be necessary.

- Consensus was reached that toxicity testing of bulk surface sediments, using the 10-day amphipod mortality test, would be conducted only for stations in Zone 4 and Stations S2B, M1, MCL-13 and MCL-14.

- Consensus was reached on the following sediment sampling depth: 0 to 18 cm (or refusal). Consensus was then reached on the following analytical approach: Initially, sediments from the following depth ranges will be subjected to analytical chemistry: 0 to 2 cm for offshore stations (*i.e.*, stations in Zone 4 and Stations S2B, M1, MCL-13 and MCL-14), and 0 to 6 cm for nearshore stations (*i.e.*, stations in Zones 1, 2 and 3). Initial analytical results for "shallow" depth sediments will be provided to EPA, NOAA and RI DEM for review; if specific stations are identified as potentially representing a greater risk than previously identified (based on a comparison to 1995 analytical results), then those stations will be selected for further chemical analysis of the full depth range (*i.e.*, 0 to 18 cm) of the archived sediment samples.

- BRE will prepare a brief sampling plan for the Navy reflecting the agreements reached at the meeting. The sampling plan will include a map and a table identifying the stations to be sampled and the list of analytes and other determinations. The sampling plan will also address the borings to be conducted to determine the outward extent of the landfill material.

Jim Quinn (URI) indicated that when comparing results from duplicate samples, usually 30% difference is used as the threshold beyond which a difference is considered to exist between the samples. Mr. Quinn indicated this threshold may be used as one parameter for the comparison of the new and previous analytical data, but that other parameters (such as grain size and TOC) may also be important.

Susan Svirsky (EPA) commented that, if no sediments are present at the specific sampling stations, this should be indicated instead of probing around the area and sampling sediments found elsewhere.

*Ken Finkelstein (NOAA) commented that based on the reached agreements the focused feasibility study for the site could probably be initiated. Mr. Finkelstein then indicated that because sediments posing risk had been eroded, and since probably the final determination for the site will be no further action, the trustees (*i.e.*, NOAA, RI DEM and U.S. Fish and Wildlife Service) will request the Navy to compensate the public with a "restoration" or "enhancement" project. Mr. Finkelstein then identified the following as example projects: formation of a saltmarsh area, construction of an artificial reef to promote the development of a shellfishery, and construction of an access path along the waterfront. Mr. Finkelstein indicated that this issue would require further discussion with the Navy.*

Jim Shafer (Navy) indicated that the Navy would entertain the request, and that further discussion of the issue would be held with the Restoration Advisory Board (RAB).

Based on the memorandum identifying the review comments to the Draft Final baseline marine ERA which needed to be discussed at the meeting, discussion was initiated on the remaining specific issues which had not yet been addressed.

Greg Tracey (SAIC) referred to bullet 1 of NOAA's comments and indicated that fish tissue data were unavailable for metals because sufficient tissue sample material could not be obtained to carry out the analytical determinations. In addition, Mr. Tracey indicated that Tissue Concentration Ratios (TCR) for fish were not included in Table 6.6-2 because no data were available for the reference station to allow the calculation of the TCR values. Also, Mr. Tracey indicated that modeling of trophic transfer and bioaccumulation of contaminants in predatory fish was not included in the work plan and thus was not conducted.

Susan Svirsky (EPA) and Ken Finkelstein (NOAA) pointed out that winter flounder was identified as a receptor in the conceptual exposure model for pelagic receptors in both the work plan and the Draft Final marine ERA report.

Greg Tracey (SAIC) indicated that the winter flounder is an omnivorous species and did not qualify as a predatory fish. Mr. Tracey added that he will include in the revised report additional discussion on metals and bioaccumulation factors in fish to clarify some of the issues raised in this NOAA comment.

Referring to bullet 2 of NOAA's comments, Ken Finkelstein (NOAA) pointed out that, in addition to the indicated revision of the text, there was still some confusion as to the relevance of the fecal pollution indicators in the ecological risk assessment, particularly in the risk characterization. Susan Svirsky (EPA) commented that the fecal pollution indicators seem to be more an uncertainty issue. Bob Richardson (RI DEM) added that fecal pollution indicators did not represent a good measurement endpoint for landfill effects. Mr. Finkelstein indicated to Greg Tracey (SAIC) that these issues were part of the confusion surrounding the use of fecal pollution indicators as an endpoint in the ERA, and asked Mr. Tracey to clarify the confusion in the revised report.

Greg Tracey (SAIC) indicated that the fecal pollution indicators were used more as general degradation indicators in the ERA, and agreed to further clarify the use of this endpoint in the revised report.

Bob Richardson (RI DEM) referred to RI DEM comment 3 and indicated that agreement should exist between the benthic community data and the interpretations presented in the text and in Table 6.6-2 of the report.

Sheldon Pratt (URI) pointed out that benthic species affected by physical gradients had not been addressed in the text of the report, and indicated that some discussion could be included in the revised report to address the potential relevance of the presence or absence of these species.

Susan Svirsky (EPA) asked what the meaning of "will be addressed" was when provided in the memorandum as a response to the review comments from the regulatory agencies.

Greg Tracey (SAIC) indicated that "will be addressed" indicates agreement with the intent of the comment.

Cornell Rosiu (CDM) referred to EPA comment 16A regarding the possibility of using multi-variate analysis of the data as a way of ranking the sampling stations.

Greg Tracey (SAIC) indicated that multi-variate data analysis had been performed for the Derecktor Shipyard Draft marine ERA report, but that the data for McAllister Point Landfill was insufficient and not amenable for this type of analysis.

Referring to Tables 4.2-9 and 4.2-10 of the Draft Final marine ERA report, Cornell Rosiu (CDM) indicated that it was not currently possible to follow the calculation of the values presented on the tables.

Greg Tracey (SAIC) agreed and indicated that the tables will be revised to include the information requested in EPA comment 24.

Referring to EPA comment 17B, Cornell Rosiu (CDM) clarified that the request for discussion of Narragansett Bay coastal hydrology was to be addressed based on information available in the literature; Mr. Rosiu then referred to the existence of information published by a URI investigator.

Greg Tracey (SAIC) indicated he was familiar with the work by John Boothroyd from URI, which he would use to address the information requested in the comment.

Cornell Rosiu (CDM) expressed agreement with Mr. Tracey's response.

Referring to EPA comments 9 through 12A, Bob Richardson (RI DEM) indicated that his outstanding concerns regarding the interpretation of benthic community data should be taken into consideration when addressing these EPA comments. Mr. Richardson again commented that he feels there is a disagreement between the interpretation of the benthic community data by the original field investigator and that presented in the Draft Final marine ERA report.

Greg Tracey (SAIC) reiterated that the interpretation of the benthic community data by the field investigator and that in the report were one and the same.

Cornell Rosiu (CDM) referred to the general comment in EPA's cover letter to the review comments, in which it is indicated that changes were made to the Draft Final marine ERA report without discussing such changes from the Draft version with the EAB.

Stephen Parker (BRE) indicated that Section 1.0 of the report, the Executive Summary, had substantially changed as a result of RAB needs.

Cornell Rosiu (CDM) and Susan Svirsky (EPA) indicated that there were additional changes outside of the Executive Summary which had not been discussed with the EAB, and mentioned the categories and criteria used in the risk characterization as an example. Mr. Rosiu and Ms. Svirsky indicated that future revisions to reports should avoid including changes which are not the direct result of review comments.

Stephen Parker (BRE) indicated that several of the additional changes in the Draft Final marine ERA report were probably the "flow down" result of addressing some of the review comments to the Draft Report.

III OLD FIRE FIGHTING TRAINING AREA (OFFTA)

Jim Shafer (Navy) and Stephen Parker (BRE) initiated the discussion by indicating that review comments had been received from the EPA for the Draft Final Work Plan for OFFTA, but that no review comments had been received from RI DEM for the same document. Mr. Parker also indicated that there was an overall concurrence with the EPA review comments and that they would be addressed.

Paul Kulpa and Bob Richardson (RI DEM) indicated that the RI DEM was in agreement with the Draft Final Work Plan for OFFTA.

IV CLOSING REMARKS

Stephen Parker (BRE) indicated that eight copies of the Draft marine ERA report for Derecktor Shipyard (DSY) had been brought to the meeting for distribution, and that reproduction of the remaining required copies was still ongoing. Mr. Parker then indicated that the number of required copies had substantially increased, and asked the representatives of the regulatory agencies and the Navy to please reevaluate their needs. Following is the number of copies identified as required by the interested parties present at the meeting:

Paul Kulpa, RI DEM: 2 copies
Kymberlee Keckler, EPA: 3 copies
Ken Finkelstein, NOAA: 1 copy
Jim Shafer, Navy - Northern Division: 4 copies
Brad Wheeler, Navy - NETC: 4 copies

Prospective recipients of report copies at the meeting indicated that they would prefer to have their copies sent to their offices.

Hector Laguette (BRE) indicated that the approach used in the risk characterization section of the Draft marine ERA report for DSY was basically the same than that used in the Draft Final version of the marine ERA report for McAllister Point Landfill. Mr. Laguette then added that the agreements reached during the eighth EAB meeting regarding the risk characterization for MPLF would be similarly applied to the next (*i.e.*, Draft Final) version of the marine ERA report for DSY.

ATTACHMENT A

LIST OF MEETING ATTENDANTS

LIST OF ATTENDANTS
EAB MEETING # 8
July 18, 1996

INDIVIDUAL	AFFILIATION	PHONE#
Hector Laquette	Brown & Root Env.	(508)658-7899
Steve Parker	BRE	(508)658-7899
Kimberly Peckler	USEPA- Boston	(617) 573-5777
Greg Tracey	SAIC	401 782 1900
Bob Richardson	RI DEM	401-277-6519 ext 7240
SHANNON BEHR	WS NAVY	(610)595-0567 x183
CORNELL ROSIN	CDM	617/252-8000
SHELDON PRATT	URI, GSO	874-6699
~~BEAU~~ WHEELER	NETC	401 841 6375/3735
TODD BOBER	NORTHDIV	610-595-0567 x160
LIYANG CHU	BROWN & ROOT ENV.	508/658-7899
Chris Kincaid	URI, GSO	401 874 6571
Jim Quinn	URI, GSO	401-874-6219
John King	URI, GSO	401-874-6594
BOB KRIVINSKAS	ROICC NARBAY	401 841 3680
Mary Pothier	CDM	617-252-8466
Simeon Hahn	NORTHDIV	610-595-0567 x190
Paul Kulpa	RIDEM	401-277-3872
JIM SHAFER	NORTHDIV	610 595 0567
Susan Svirsky	USEPA	(617) 573-9649

ATTACHMENT B

MEETING AGENDA

PROPOSED AGENDA
Ecorisk Advisory Board (EAB) Meeting No. 8
NETC Newport, Building 1
July 18, 1996

Convene 9:30

Session 1: McAllister Point Landfill

- Comments to The Draft Final Report
- Topography Changes at the Shoreline
- Review of the Results of the Ecological Risk Assessment
- Proposed Re-sampling Effort

Session 2: Old Fire Fighting Training Area

- Comments to the Draft Final Work Plan
- Results of Hydrographic Survey
- Final Sample Stations

Adjourn 3:00

There will be a 45 minute lunch break as appropriate.

ATTACHMENT C

MEMORANDUM AND OTHER HANDOUTS

MEMORANDUM

DATE: 7/18/96

TO: NETC sites Ecorisk Advisory Board members

RE: Review comments to the Draft Final Marine ERA report for McAllister Point Landfill

Attached are copies of the specific review comments to the above indicated report. These comments were received from NOAA, RI DEM and EPA, and have been enumerated for reference. Based on the comment numbers in the attachments, following is a preliminary determination of whether each comment will be addressed or if discussion at the EAB meeting is necessary. Please note that two general issues exist which are common to numerous comments and have been identified as GENERAL ISSUES "**I**" and "**II**".

<u>NOAA comments (from Kenneth Finkelstein, letter dated June 13, 1996)</u>

Four bulleted comments were received.

Bullet 1 - Issues: Modeling of trophic transfer and bioaccumulation of contaminants in predatory fish; fish tissue concentrations for metals; and inclusion of information on fish tissue concentrations in Tables 6.6-1 and 6.6-2. **NEED TO DISCUSS.**

Bullet 2 - Revision to the indicated text on page 4-22 will be conducted.

Bullet 3 - GENERAL ISSUE **I**: Categories and criteria used in risk characterization. **NEED TO DISCUSS.**

Bullet 4 - GENERAL ISSUE **II**: Eroded sediments. **NEED TO DISCUSS.**

<u>RI DEM comments (from Paul Kulpa, letter dated June 19, 1996)</u>

Three specific comments were received.

Comment 1 - Will be addressed.

Comment 2 - Will be addressed.

Comment 3 - Issue: Request for submittal of a "statement" from field biota researchers directly to the RI DEM. **NEED TO DISCUSS.** (Note: The correct table number to which this comment refers is Table 6.6-2, which presents *effects*-based weights of evidence information).

EPA comments (from Kymberlee Keckler, letter dated July 3, 1996)

SPECIFIC
COMMENTS

1	GENERAL ISSUE II: Pre- and post-cap/revetment conditions (*i.e.*, eroded sediments); results from topography survey, fate analysis of eroded sediments, and additional sediment sampling and testing; integration of the results into current report. **NEED TO DISCUSS.**
2 through 6	Will be addressed.
7	GENERAL ISSUE I: Categories and criteria used in risk characterization. **NEED TO DISCUSS.** Issue specific to comment 7: The categories and criteria used in the risk characterization are explained in Section 6.6.2 of the report, and it is being proposed to include reference to such section in the Executive Summary (Note: Refer also to the specific issues for EPA comments 11 and 14).
8	Will be addressed.
9 through 12A	GENERAL ISSUE I: Categories and criteria used in risk characterization. **NEED TO DISCUSS.** Issue specific to comment 11: A definition of the "minimal" category will be included in the report (Note: Refer also to the specific issue for EPA comments 7).
12B through 12D	Will be addressed.
13 and 14	GENERAL ISSUE I: Categories and criteria used in risk characterization. **NEED TO DISCUSS.** Issue specific to comment 14: A definition of the "minimal" category will be included in the report (Note: Refer also to the specific issue for EPA comments 7).
15	Will be addressed.

EPA comments (continued)

16A	Two Issues: ● The text on page 1-22 of the report referring to uncertainty will be revised and expanded as appropriate for the Executive Summary to address most of the comment. ● A multi-variate analysis of the data was not originally intended and thus was not conducted. **NEED TO DISCUSS.**
16B, 17A	GENERAL ISSUE II: As indicated in EPA comment 1 above (*i.e.*, eroded sediments). **NEED TO DISCUSS.**
17B	Issue: Request for information on the coastal hydrology of Narragansett Bay and the seasonal variations in sediment transport. **NEED TO DISCUSS.**
18 through 24	Will be addressed.
25 and 26 (A and B)	GENERAL ISSUE I: Categories and criteria used in risk characterization. **NEED TO DISCUSS.**
27 through 33	Will be addressed.

Attachments:
- K. Finkelstein/NOAA, letter dated June 13, 1996
- P. Kulpa/RI DEM, letter dated June 19, 1996
- K. Keckler/EPA, letter dated July 3, 1996

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Admin.
National Ocean Service
Office of Ocean Resource Conservation and Assessment
Hazardous Materials Response and Assessment Division
c/o EPA Waste Management Division (HEE-6)
J.F. Kennedy Federal Building
Boston, MA 02203
13 June 1996

Ms. Kimberlee Keckler
U.S. EPA Waste Management Division
J.F. Kennedy Federal Building
Boston, MA 02203

Mr. Robert Krivinskas
U.S. Department of the Navy
Northern Division - NAVFAC
10 Industrial Highway
Code 1811/PO - Mail Stop 82
Lester, PA 19113-2090

Dear Kimberlee/Bob:

Thank you for the Draft Final McAllister Point Landfill Marine Ecological Risk Assessment Report: Naval Education and Training Center, Newport, Rhode Island. Volumes I and II. Prepared for Department of the Navy, Northern Division Naval Facilities Engineering Command by Science Applications International Corporation and the University of Rhode Island, 3 June 1996. This version follows the draft report that NOAA reviewed 16 October 1996.

Approach and Organization of ERA

As discussed in October 1995, a variety of sampling was conducted, including: sediment sampling; amphipod and sea urchin bioassays; tissue analysis of mussels, blue crab, lobster, and fish; and benthic macroinvertebrate community structure analysis. The risk assessment was conducted according to EPA guidance. Components that are considered important aspects of any ERA were addressed, including: purpose, scope, and objectives; problem formulation (including assessment and measurement endpoints, identification of CoCs, conceptual models); exposure assessment; ecological effects assessment; and risk characterization.

Comments

As I discussed previously, an extensive amount of sampling and analysis was conducted for this ERA. Overall, the approach was appropriate, the data quality and analysis were good, and the report was well-organized. The data were interpreted carefully and with a conservative (i.e., protective) perspective; however, several of NOAA's comments were not addressed and a new issue concerning the intertidal environment in front of the landfill, discussed below, has arisen.

Previous comments (in italics) include (with follow-up comment in plain text):

(1) • *The ERA did not address trophic transfer and bioaccumulation of contaminants in predatory fish, although the greatest concern is probably the observed toxicity, likely due to elevated concentrations of trace elements.* Section 6.3.2 (Metals Bioaccumulation) does not include data for fish. Table 4.2-13 shows concentration of organic contaminants in fish (cunner) but not inorganics in the later tables. It

is not clear why the inorganic data is not included; it would provide potential toxicity data and clear bioaccumulation data. Also, there was no discussion of trophic transfer to predatory fish. Finally fish tissue concentrations (organic and inorganic) indicating bioaccumulation (exposure) or potential toxicity (effects) are not included in Tables 6.6-1 or 6.6-2; they should be.

(2) • *The role of tissue pathogens in the ecological risk assessment should be clarified.* I am still not certain that this study is necessary but it does not take away from the ERA. Nevertheless, the last sentence of Section 4.2.4 (page 4-22) needs to be rewritten.

Two new comments are as follows:

(3) • I am not certain the document is improved by using the categorization of ecological risks (Section 6.6.2 - Characterization of Risk) proposed by Glen Suter (1995). This is a subjective framework that forces the risk assessor to follow prescribed definitions. For example, many measurement endpoints that indicate risk, but just slightly, would result in a "De Manifestis (severe)" ecological risk when it may not be deserved. It is not clear where several, but not all, measurement endpoints that strongly indicate risk would fall: "Intermediate" or "De Manifestis (severe)". I prefer weighing the evidence on a professional judgment basis within a team approach. I am not certain that rigid guidelines are helpful.

(4) • Recently, I learned that much of the intertidal sediment in front of the landfill has been lost due to erosion. This is an unfortunate occurrence given that the areas of greatest risk were in this area (note Table 7.1-1). A meeting to discuss follow-up sampling and future plans for the landfill shoreline is very necessary. I previously sent you my comments after viewing the April 1996 video tape of the McAllister Point Landfill revetment

Please let me know if you have any questions or need further information.

Sincerely,

Kenneth Finkelstein, Ph.D.

cc: Susan Svirsky (EPA)
Tim Prior (USF&WS)

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
DIVISION OF SITE REMEDIATION
291 Promenade Street
Providence, R.I. 02908-5767

June 19, 1996

Robert Krivinskas, Remedial Project Manager
U.S. Department of the Navy
Northern Division, Naval Facilities Engineering Command
10 Industrial Highway
Code 1823-Mail Stop 82
Lester, PA 19113-2090

RE: Marine Ecological Risk Assessment Report, Draft Final, McAllister Point Landfill
Newport Education and Training Center, Newport, Rhode Island

Dear Mr. Krivinskas:

The Division has reviewed the Draft Final McAllister Point Landfill Marine Ecological Risk Assessment Report. Please find attached comments generated on this document. If you have any questions concerning the above, please contact this office at (401) 277-2797.

Sincerely,

Paul Kulpa

Paul Kulpa, Project Manager
Division of Site Remediation

cc: Warren S. Angell, DEM DSR
Richard Gottlieb, DEM DSR
Kimberly Keckler, EPA Region I
Brad Wheeler, NETC

mplferd com

Comments On
McAllister Point Landfill Draft Final
Marine Ecological Risk Assessment Report

1. **Section 5.2.2, Sea Urchin Test Results,**
Page 5-25, Whole Section.

The results discussed in the text for the Sea Urchin test do not correspond to the values depicted in the graphs and charts. The test should be modified to reflect the results in the text.

2. **Table 6.6-1, Summary of Exposure Based Weights of Evidence for the McAllister Point Landfill ERA.**

This table summarizes the results of the various test performed during the ecological risk assessment. Listed below are a number of typographical errors contained in the table. Please modify the table accordingly.

For the Amphipod toxicity test the designation for station NSB-2 is (-). This does not correspond to the value in the text, therefore the designation should be changed to (+).

The criteria listed in footnote three is ...50-70 % of control....
The value listed in the test is 80 %, therefore the footnote should be changed accordingly.

In the table the designations for JCC-D1 and JCC-S1 appear to be flipped, that is JCC-S1 should be (++) and D-1 should be (+).

In the table SDA M-1 is listed as (-), the designation should be (++).

The table contains toxicity information concerning MCL-13,14,16, OS-30B.etc. The text does not adequately discuss the sample locations or note them as being statistically different. Therefore, the appropriate section of the report should include a discussion of these sampling locations.

The table contains a footnote for sample values which are less than control. The footnote designation is labeled as less than control. However, the correct designation should be significantly or statistically less than control, (that is values or results the sample locations which are listed as less than control are in fact significantly or statistically less than control, not just less than control as the footnote indicates. The footnote should be changed accordingly in order to convey the correct information.

The Navy has summarized all of the ecological and testing results on two pages. The Division commends the Navy for presenting the information in this format. In an apparent effort to make the table more legible and easier to follow, the different sampling zones were demarcated with horizontal lines. This procedure was employed for the chemical test, however, it was not used for the ecological test. If this is not a typographical error, the rational for this deviation should be included in a footnote.

3. **Table 6.6-1, Summary of Exposure Based Weights of Evidence for the McAllister Point Landfill ERA.**

The designations in the table for the field biota test results have not changed from the previous submittal. It is the Division understanding that changes would be reflected in the draft final report. However, the Division is cognizant that anticipated changes may not have been made due to a reevaluation of the results. Therefore, in order to expedite the process the researchers directly involved in the field biota studies should submitted to the Division a statement in support of the latest submittal.

File: 4725-3.1
c: Laguette
Parker
Quinn
Tracy

Received by Electronic Mail
0700 7-9-96 LdPl

July 3, 1996

Robert Krivinskas, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: McAllister Point Landfill, Marine Ecological Risk Assessment Report: Volumes I and II at the Naval Education and Training Center, Newport, RI

Dear Mr. Krivinskas:

I am writing in response to your request for EPA to review the *McAllister Point Landfill, Marine Ecological Risk Assessment Report, Volumes I and II* dated June 3, 1996 and May 20, 1996 respectively, for the Naval Education and Training Center ("NETC"), in Newport, RI. I am concerned that many of the issues raised by EPA remain unresolved (see *Section 3.2, Assessment and Measurement Endpoints, Page 3-16 and 3-17; 3rd ¶, 4th and 5th Sentences*). Detailed comments are discussed in Attachment A.

This draft final report has been substantially changed from the previous draft version dated September 24, 1995. Changes were made to the report without discussing them with the Ecological Advisory Board ("EAB") and in some cases make the report less acceptable (*see* Specific Comments *Section 1.4.2, Tissue Residues, Page 1-6 and 1-7, 3rd ¶, last sentence* and *Section 1.4.1, Sediment Contamination, Page 1-6, 1st ¶ Last Sentence and last ¶*)

The exposure modeling methods in Section 4.2.5.1 and results in Tables 4.2-9 and 4.2-10 lack clarity and completeness because the terms and units vary between the text and tables and some variables are not defined in either location.

The data presented in Appendix A through Cwere not referenced nor explained. The text and tables should be clarified and should include adequate Quality Assurance ("QA"). For example, tables in Appendix A-1-1 are not numbered and need QA (*e.g.*, Specific Comment *Volume II, Appendix A-1-3, Table ____c, Sample Inventory and Data Analysis Information, page 3 of 5*).

The development of "Overall EEZ Risk" qualifiers do not correspond to the level of risk indicated by results of the study data in Tables 6.6-1 and 6.6-2. (*See* Specific Comments *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 3rd ¶; Section 1.6, Risk*

Characterization, Risk Synthesis, Page 1-20, 4th and 5th ¶¶, Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 6th ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-21, 1st ¶; and Section 1.6, Risk Characterization, Risk Synthesis, Page 1-21, 2nd ¶.)

Update the risk summary and uncertainty sections concerning the (potential) erosion of intertidal sediment adjacent to the landfill during winter 1995-96. Provide fate and transport analysis of the eroded material and new chemistry or toxicity data to support.

I look forward to resolving these issues at our meeting of July 18, 1996. Please do not hesitate to contact me at (617) 573-5777 should you have any questions before our meeting.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Paul Kulpa, RIDEM, Providence, RI
Brad Wheeler, NETC, Newport, RI
Bob DiBiccaro, USEPA, Boston, MA
Susan Svirsky, USEPA, Boston, MA
Mary Pothier, CDM, Boston, MA
Ken Finkelstein, NOAA, Boston, MA

ATTACHMENT A

	Page	Comment
(1)	pp. 1-3 & 1-4, §1.3, ¶3	Revise the site characterization to include a brief physical description of the intertidal zone of the Landfill under pre- and post-cap construction, and identify how much the topography/bathymetry has changed. Revise the report to summarize new surveyor data and sediment chemistry and/or toxicity data to support statements of whether inter-tidal sediment changed in winter 1995-96 because of landfill cap and revetment construction.
(2)	p. 1-6, §1.4.1, ¶1	Revise this sentence by either returning it to its previous draft version, or correct the statement to, "... predict that these divalent metals are potentially bioavailable at Stations SDA-M2, M3, D1, D2, D3, 30A, and 30B, but not bioavailable at Stations SDA-S2B, S1, S3, S4, and M1." The statement "SEM/AVS" and data presented in Figure 4.2-15 support this recommended edit.
(3)	p. 1-6, §1.4.1, last ¶	The conclusion to this section was deleted in the draft final version of the document. The draft summary regarding sediment inorganic contaminants concluded, "[The] spatial distribution of metals of anthropogenic origin strongly implicate McAllister Point Landfill as the dominant source of these metals within the study area. However, it is noteworthy that high arsenic levels are found at...." Provide evidence that the statements in the draft paragraph are no longer correct, or include the draft conclusions in the draft final executive summary.
(4) A	pp. 1-6 & 1-7, §1.4.2, ¶3	Draft statements were deleted from the draft final version. The draft correctly states that, " ... depurated clams had higher TBT values (7 to 40%) than the non-depurated samples." This was the case for hard clams (Figure 4.2-12) and blue mussels (Figure 4.2-11), but was opposite from the relationship between non-depurated (higher) and depurated (lower) tissue residues for PAHs and PCBs. Return the executive summary to its draft version that identifies important differences between tissue residues of TBT versus PAH and PCB in bivalves.
B	p. 1-12, §1.5.2, ¶1	Revise the paragraph to include the level of analysis that was achieved in the draft version of the executive summary. Identify differences in

the tissue weigh/length index for blue mussels from Stations NSB-1 to 7 (particularly NSB-2 and 7) relative to Stations NSB-8 to 11.

Revise this section to include the results of histopathology on shellfish. Indicate whether there was a higher prevalence of hemocytic neoplasia in bivalves at intertidal stations adjacent to the Landfill.

(5) p. 1-16, §1.6, ¶¶3&4 — Revise the text in the 3rd paragraph concerning "relationships between amphipod survival and metal bioavailabity (SEM/AVS)." It is not correct to state that results "... clear[ly] implicate metals as the cause for toxicity..." since only SEM/AVS < 1 can provide a basis for predicting lack of bioavailability to solely copper, zinc, nickel, cadmium, and lead. In addition, no relationship has yet been shown in the literature concerning mercury, AVS, and bioavailability using the SEM/AVS paradigm. Revise the 3rd sentence in the 4th paragraph for the same reason as stated above. SEM/AVS > 1 is not an indication that "... observed toxicity ... [is] related to metal exposure."

(6) p. 1-18, §1.6, ¶2 — Revise the text to include substantive rationale for "discounting" Station NSB-6 as potentially impacted, relative to Station NSB-5, "because of a marked change in habitat characteristics" between these stations. Field data indicate similarities in benthic community structure between Stations NSB-5 and 6 (*i.e.*, "pollution tolerant species" are present), however, Station NSB-6 is "discounted" as potentially impacted. Identify physical conditions (or identify physical stressors) at Station NSB-6 that might encourage the presence "pollution tolerant species," or would give them a competitive advantage over non-pollution tolerant species.

(7) p. 1-19, §1.6, ¶2 — Define specific rules or criteria that were used to qualify to data into risks as "minimal," "slight," "moderate," or "severe" for Zones 1 through 7 based on the weight of evidence. Provide a reasonable approach and rationale in definition of the rules and criteria ("Overall EEZ Risk" qualifiers) and explain how these are appropriate estimates of probability or severity of risk. Re-evaluate the weight of evidence using the defined rules or criteria (*see* Specific Comments *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 3rd ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 4th and 5th ¶¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 6th ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-21, 1st ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-21, 2nd ¶.*)

(8) p. 1-20, §1.6, ¶2 Correct the spelling of "macroinvertebrate."

(9) p. 1-20, §1.6, ¶3 In the 1st sentence, replace "the highest" with "severe." Revise the 2nd sentence as follows: "Contains abundant benthic communities which are comprised of pollution tolerant species, but higher CoC concentrations...." Re-evaluate and revise the weight of evidence for this zone in response to Specific Comment: *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-19, 2nd* ¶. It is stated that Zone 2 "exhibit[s] the highest risk for the entire landfill study area," yet risk is "assessed as moderate."

(10) p. 1-20, §1.6, ¶¶4&5 Re-evaluate and revise the weight of evidence for Zones 3 and 3A in response to Specific Comment *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-19, 2nd* ¶. The summary data in Tables 6.6-1 and 6.6-2 do not support conclusions of "assessed as slight to moderate." Zone 3A data suggests this zone presents greater than "moderate" risk (*e.g.*, see Tables 6.6-1 and 6.6-2).

(11) p. 1-20, §1.6, ¶6 Define risk qualified as "minimal" in response to Specific Comment *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-19, 2nd* ¶.

(12) p. 1-21, §1.6, ¶ A Re-evaluate and revise the weight of evidence for Zone 5 in response to Specific Comment, *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-19, 2nd* ¶. The summary data in Tables 6.6-1 and 6.6-2 does not support a conclusion of "assessed as slight." Revise the statements, "low CoC sediment concentrations" and "low sediment risks from metals and organics" since concentrations of PAHs, PCBs, and metals in Zone 5 are between ER-L and ER-M criteria or above the ER-M (mercury only).

B Revise the last sentence in this paragraph and re-phrase the statement, "uncertainty about operative contaminant exposure pathways." Indicate that tissue residues were higher in hard clams from Zone 5 than any other. Zone 6 tissue chemistry includes lobster, according organic chemistry data tables, therefore, include "HPP" in the species column for Zone 6.

C Delete "i.e., no toxicity" from the text since it is misleading, and state that toxicity data is not available for sediments in Zone 5.

D Identify the uncertainty regarding the likelihood to overestimate or underestimate ecological risks.

(13) p. 1-21, §1.6, ¶2

Re-evaluate and revise the weight of evidence for Zone 6 in response to Specific Comment *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-19, 2nd* ¶. The summary data in Tables 6.6-2 does not support a conclusion of "assessed as slight." For example, sediment concentrations were between ER-L and ER-M sediment criteria for many organics and metals, and tissue residue levels were high in lobster and blue mussel from Zone 6, relative to the reference location. Identify and discuss this in the text.

Identify uncertainties and indicate whether the risk estimate is likely to be an overestimate or underestimate.

(14) p. 1-21, §1.6, ¶3

Define ecological risk qualified as "minimal" in response to Specific Comment *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-19, 2nd* ¶.

(15) pp. 1-21 & 1-22, §1.7, ¶5

Delete the statement "it is clear" from the text since the results are equivocal. Revise the sentence to include results of tissue chemistry that indicate that significant risks may exist offshore of McAllister Point Landfill because they are an indicator of bioavailability and exposure. Tissue residue levels were highest in hard clams from Zone 5, but Zone 3A hard clams and Zone 6 lobster and blue mussel also had high tissue residue levels.

(16) p. 1-22, §1.7

A Delete from the 2nd sentence, "hence there would appear a high probability of accurately concluding the occurrence of risk." This statement is not supported by the data. Identify uncertainties that were previously identified in the weight of evidence using the site data. Present the results of food chain modeling. Summarize a discussion of the variable factors (possibly summarize results of multi-variate data analysis) that can affect exposure and/or effects (*e.g.*, species life history, bioturbation of sediment, detoxification), and consider these variables (and uncertainty) in relation to the study design and likelihood of over-estimating or under-estimating ecological risks.

B Include in the revision new information concerning the potential erosion of intertidal sediment near the Landfill during winter 1995-96. Present the results of fate and distribution analysis or new sediment chemistry and/or toxicity data.

(17) p 3-2, §3.1.1

A Indicate that Landfill cap construction took place during 1995-96 and include a characterization of the Landfill intertidal zones before and

after construction. Introduce the potential for sediment erosion from intertidal zones during winter 1995-96 using surveyor data.

(17) B Introduce the coastal hydrology data of Narragansett Bay with an emphasis on seasonal variations in sediment transport.

(18) p. 3-10, §3.1.3.2, ¶1 Revise the text to include exceedances of ER-L guidelines for copper, lead, and mercury in sediment from Stations OS-28, NSB:0-8, MCL-12, and OS-30; nickel in sediment from Station OS-28, 29, and 30; and arsenic in sediment from Stations OS-30 and MCL-15.

(19) p. 3-10, §3.1.3.2, ¶2 Clarify the meaning of AVS relative to SEM (copper, zinc, nickel, cadmium, and lead) on a molar mass basis. Lack of bioavailability to copper, zinc, nickel, cadmium, and lead only can be predicted when (SEM/AVS) < 1, or (SEM - AVS) is negative.

Include in the discussion results of SEM/AVS calculations for sediment from near-shore intertidal areas (Zones 1, 2, and 3).

(20) pp. 3-16 & 3-17, §3.2, ¶3 A Delete *all* uses of the term "pathogen" from the report. As in previous EPA comments, the term must be accompanied by specific definition and understanding of the receptor species. Pathogen means any disease-producing agent or microorganism, but pathogens are highly species-specific. For example, a pathogen to one organism (*e.g.*, humans) may not be pathogenic to another (*e.g.*, gulls).

B Cabelli (1978) uses pathogens specifically in relation to human exposure to water pollution microbiology and the probability for disease production in humans. This is not the case in this study. Replace the term pathogens with "selected fecal pollution indicators" to be consistent in the report.

(21) pp. 3-21 & 3-22, §3.4, ¶4&1 (respectively) If appropriate, include with cunner and hard clam (*Mercenaria mercenaria)*, the scientific name(s) of other species that are represented in the results of the tissue chemistry. In other words, if mummichog (*Fundulus heteroclitus*) and *Pitar morrhauna* species of hard clam were sampled from the bay and are included with data from cunner and *M. mercenaria* (respectively), the draft final version of the report must reflect this. (These additional species were identified in the draft version.) Revise the text accordingly.

(22) p. 3-23, §3.4, ¶1 Delete reference to great blue heron as a "species of aesthetic importance." This ecological receptor represents a carnivore in the food

chain and is representative of other wading shorebirds (*e.g.*, snowy egret, *Egretta thula*) that are principally piscivorous and may also occur on site. This species is important to both the local aquatic ecology and the larger ecosystem. Revise the text to state this case. EPA's *Wildlife Exposure Factors Handbook* (EPA 1993) may be helpful.

(23) p. 3-27, §3.5.4, ¶3 Revise the text to indicate that Tier IV conceptual models include both *cunner and* blue mussel as part of food chain exposure pathways to the avian aquatic receptors.

(24) pp.4-23 to 4-26, §4.2.5 1, Tables 4.2-9 & 4.2-10 A, B,& C

A Revise the text and tables to make them consistent and confirm the calculations. Define whether the "bird ingestion rate of 0.2 kg food/kg body weight/day" was used or if allometric regression models were used to determine "f."

B Revise exposure model definitions on pages 4-23 and 4-24 for great blue heron to reflect use of exposure point concentrations (EPCs) to fish and ingestion factor (I) of fish. Add terms: EPC to fish (µg CoC/kg fish) and I of fish (kg wet weight fish consumed/kg bird/day) for great blue heron. Add a table of all exposure factors used to model great blue heron and herring gull.

C Revise the report to include a table of mean and maximum mussel and fish concentrations data that were used to derive EPCs "of COCs [that] were calculated separately for mean and maximum mussel and fish concentrations" (stated in the first sentence of paragraph three on page 4-24). It is currently not possible to verify the reported concentrations under the column "Tissue Concentration" in Table 4.2-10 A, B, and C. Revise Table 4.2-10 to include mean and maximum "Field Dose" and mean and maximum "Hazard Quotients" results using the mean and maximum concentrations data.

D These tables must consistently and specifically identify all values presented in equations on pages 4-23 through 4-26 (*e.g.*, F, bw) and cite literature sources, and in Tables 4.2-9 and 4.2-10. The revised document must allow confirmation of the dose calculations and estimates of risk.

E Identify the method(s) used to develop EPCs on a wet weight basis Identify if tissue percent moisture assumptions were used, or how the study data were used, to derive the wet weight EPCs. In the revised report, identify percent moisture content for both mussel and finfish tissue.

(24) F Include the bulleted exposure model assumptions on page 4-24 in the discussion of uncertainty in Section 4.3.

(25) p. 6-23, §6.6.2 — Re-evaluate and revise the qualifiers of risk in this section according to specific comments on the executive summary text (*see* above) and Specific Comments concerning *Section 7.1, Synthesis of Study Findings, Pages 7-1 Through 7-2, and Table 7.1-1* for Zones 1 through 7.

(26) pp. 7-1 to 7-2, §7.1 & Table 7.1-1 — A Revise the qualification of risks using the "Overall EEZ Risk" parameter according to Specific Comments *Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 3rd ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 4th and 5th ¶¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-20, 6th ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-21, 1st ¶; Section 1.6, Risk Characterization, Risk Synthesis, Page 1-21, 2nd ¶.*

B The risk synthesis presented in this section and in Table 7.1-1 is not supported by the summary of results in Tables 6.6-1 and 6.6-2.

(27) Vol. II, Appendix A-1-1, TABLE :USN SED McA. Pt.-PCBs+OCPs: — Define "nc" and the symbol "<" in the footnotes for these tables. (This comment is the same as in the draft.)

(28) Vol. II, Appendix A-1-1., "TBT 293," "SDG #####" — This table must be revised. It appears as it did in the draft version of the document and therefore EPA repeats this comment. The information contained in the table remains unclear because the table is not described in the text, data types are mixed within a column (*e.g.*, percent and empirical values occur together), column titles are ill-defined (*e.g.*, what is the meaning of "% TPT Rec."), and typographical errors such as row mismatching.

(29) Vol. II, Appendix A-1-3 — *"Table ____c" Organic Contaminants and "Table ____d" Butyltins:* Number the tables in this appendix and explain them in the text. Conduct QA checks of the data in these tables. For example, correct the dates in Items 38 through 42 on Page 3 of 5 because the "Freezer Storage Date at -20°C" (05/04/95) precedes the "Sampling date" (05/09/96). This is arrangement of dates is not possible. In addition, correct the dates for Items 66, 67, and 69 on Page 4 of 5 and Page 5 of 5. Chain of custody #s sometimes listed under the heading "Freezer Storage Date at -20°C."

(30) Vol. II, Appendices A-2-1.1 & 1.2

Move footnote ([1]) in the title from its present position (shows to the right of "criteria") to a revised position (shown to the right of "McAllister Point sediments") because the present position may be interpreted as, the Jamestown Cottington Cove (JCC) reference data are "data for Stations OS-22 through OS-30 from TRC (1994)."

(31)

Confirm use of JCC reference tissue chemistry as the numerator of "tissue concentration ratios," print the equation in the footnote, and explain the procedure and its relevance in the text.

(32) Vol. II, Appendices A-2-2.1 to A-2-2.9

Add a discussion of the term "benchmark" (*i.e.*, its meaning in this ecological risk assessment varies from effect-criterion to reference condition) and discuss the relevance of developing "tissue reference ratios" using JCC reference data. Also cite these tables the text.

Move the position of footnote ([1]) as indicated above. In its present position this footnote can cause the reader to misinterpret "JCC reference data" as "data for Stations OS-22 through OS-30 from TRC (1994)."

(33) Vol.II, Appendix B-2

Replace "Pathogen Analysis" with the term "Fecal Pollution Indicator Analysis." (*See also* Specific Comment *Section 3.2, Assessment and Measurement Endpoints, Page 3-16 and 3-17; 3rd ¶, 4th and 5th Sentences.*)

Summary of Weights of Evidence Rankings for McAllister Point Landfill ERA.

Category	Weight	Flag	Ranking
Exposure Characterization	Sediment HQs	-	< ER-L
		+	ER-L to ER-M
		++	> ER-M
	SEM Bioavailability	-	SEM<AVS
		*	SEM/AVS>1
		+	* and SEM-AVS > 1 µmole/g
		++	* and SEM-AVS > 10 µmole/g
	Porewater HQs	-	< WQC-Chronic
		+	WQC-Chronic to Acute
		++	> WQC-Acute
	Fecal Pollution Indicator Concentrations in Sediment	-	< 100 CFU/100g
		+	100-350 CFU/100g
		++	>350 CFU/100g
	Avian Predator TRV-HQs	-	Maximum TRV-HQ < 1
		+	Maximum TRV-HQ > 1
Effects Characterization	Site vs. Reference Tissue Concentration Ratios	-	TCR<1
		+	TCR>1
		++	TCR>10
		+++	TCR>40
	Arbacia Toxicity (Porewater Fertilization Test)	-	not toxic
		*	statistically < control (α = 0.05)
		+	statistically < control and 50-70% of control
		++	statistically < control and < 50% control
	Ampelisca Toxicity (Bulk Sediment Survival Test)	-	not toxic
		*	statistically < control (α = 0.05)
		+	statistically < control and 60-80% of control
		++	statistically < control and < 60% control
	Bivalve Condition Index (CI) (Indigenous Mussels)	-	no effect or CI
		+	possible reduction in condition
	Benthic Community Structure	-	no effect
		+	possible CoC related increase
	Fecal Pollution Indicator Concentrations in Tissues	-	< 100 CFU/100g
		+	100-350 CFU/100g
		++	>350 CFU/100g
Risk Characterization	• Weight of Evidence Codes; • Concordance between Exposure and Response Weights; • Strength of Exposure-Response Relationships • Spatial Extent of Risk	-	minimal risk
		+	slight risk
		++	moderate risk
		+++	severe risk
		ND	no data to evaluate risk

Categorization of Ecological Risks for the McAllister Point Landfill Ecological Risk Assessment.[1]

De minimis	Slight	• pose possible risks based on some ecological endpoints • undectable by the majority of exposure- and effects-based weights of evidence • lack of demonstrable exposure-response relationships • areas typically do not require remediation
Intermediate	Moderate	• risks fall between slight and severe; considered non-trivial • multiple weights of evidence indicate significant exposure and/or effects occurring at the site • suggestive, but perhaps not highly quantitative, exposure-response relationships • restricted to highly localized areas • occur for periods of limited duration • do not require remediation without first balancing against costs, health risks, and other considerations
De manifestis	Severe	• pose immediate, pronounced threats to threatened/endangered species, local species and/or habitat • supported by clear, unambiguous agreement among various weights of evidence • demonstrable exposure-response relationships • areas typically require immediate remediation

1 - Framework developed by Suter *et al.*, 1995.

Table 7.1-1 Summary of Risks by Zone for the NETC McAllister Point Landfill Ecological Risk Assesment.

		Ecological Exposure Zone[A]							Reference
	Measurement Endpoint	**Intertidal Landfill North[1]**	**Intertidal Landfill Center[2]**	**Intertidal Landfill South[3]**	**3A**	**Subtidal Landfill[4]**	**Landfill Offshore[5]**	**Southern Depositional Area[6]**	**Jamestown Cranston Cove[7]**
E	Sediment PAHs	-	+	+	++	+	+	+	+
X	Sediment PCBs	+	++	++	++	++	+	+	+
P	Sediment Pesticides	-	+	+	+	-	-	-	-
O	Sediment TBT	+	-	-	-	-	ND	-	-
S	Sediment Metals	+	++	++	+	-	+	+	+
U	Sediment SEM/AVS	++	++	+	-	+	-	+	+
R	Porewater	+	++	+	ND	+	ND	+	ND
E	Sediment Fecal Indicators	++	++	+	ND	++	ND	+	ND
	Avian Aquatic Predator Exposure	-	-	-	ND	ND	ND	ND	ND
E	Mussel Tissue	+	++	++	ND	ND	ND	ND	ND
F	Hard Clam Tissue	ND	ND	ND	++	+	+++	+	ND
F	Lobster Tissue	ND	ND	ND	ND	++	ND	++	ND
E	Amphipod Survival	++	++	+	+	-	-	-	-
C	Sea Urchin Fertilization	-	++	-	++	-	-	+	+
T	Bivalve Condition	-	+	-	ND	-	ND	-	ND
S	Comunity Structure	-	+	+	ND	-	ND	-	+
	Tissue Fecal Indicators	++	+	+	ND	+	ND	+	+
	Overall EEZ Risk	Slight	Moderate	Slight to Moderate	Slight to Moderate	Minimal to Slight	Slight	Slight	Minimal

A) See Section 6.7-1 and Figure 6.7-1 for description and location of zones.

1) NSB-1, NSB-2; **2)** NSB-3 TO NSB-5; **3)** NSB-6, NSB-7; **3A)** OS-28, S2B; **4)** MCL-8 TO MCL-12, S2; **5)** OS-23 to OS-27, SDA-M1; **6)** SDA: S1-S4, M2-M3, D1-D3, MCL13-MCL-16, OS-29, OS-30, OS30A-B; **7)** JCC-S1, JCC-M1, JCC-D1

CODES: **+++ =** severe impact; **++** = moderate impact; **+** = slight impact; **-** = minimal impact; ND = no data to evaluate impact.