MINUTES OF MEETING

SUBJECT: Technical Review Committee (TRC) Meeting
Portsmouth Naval Shipyard (PNS)

PURPOSE: The TRC meeting was called by the Navy to present the proposed On-Shore Media Protection Standards.

LOCATION: Portsmouth Naval Shipyard
Kittery, Maine

DATE: November 9, 1993

PREPARED BY: Stephen F. Urschel
Manager, Geosciences
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November 12, 1993

ATTENDEES:

Community/Public Representatives

Jeff Clifford, Town of Kittery
Dr. Francis R. Hall, Retired
Phil McCarthy, Town Supervisor

USEPA Region I

Ernest Waterman, Project Manager

U.S. Navy - PNS

Jim Tayon, Environmental Affairs
Ken Plaisted, Environmental Affairs
Mike L'Abbé, CNAAB
Len Sargent, Code 106.3
Ralph Hickson, Code 121.8
Casey Szewzaic, NEHC DET

U.S. Navy - Northern Division, Philadelphia

Debbie Carlson, Remedial Project Manger
Mark Leipert, RTM

Maine DEP

Nancy Beardsley, Project Manager

NCCOSC

Bob Johnson, Project Coordinator

Mahoney Associates

Eileen Mahoney, Toxicologist

McLaren/Hart Environmental Engineering Corporation

Stephen Urschel, Project Manager, Albany, NY
Kristen Sayer, Environmental Scientist, Albany, NY

University of New Hampshire-JEL

Larry Ward

Halliburton NUS

Linda Klink

Maine DMR

Brad Sterl, Biologist

U.S. Fish & Wildlife

Kenneth Carr

BACKGROUND

The subject TRC meeting was held at the Shipyard Museum at Portsmouth Naval Shipyard, Kittery, Maine to update committee members on the proposed On-Shore Media Protection Standards (MPS) based on revisions generated by USEPA Region 1 and MEDEP comments.

DISCUSSION AND SUMMARY

The meeting was opened at approximately 10:30 a.m. by the Shipyard's Commanding Officer, Navy Captain Lance Horne, who welcomed everyone and their involvement on the Technical Review Committee. Captain Horne explained briefly his background with the Navy and pledged to continue with Admiral Fenton's approach of being proactive in the environmental community.

Deborah Carlson then introduced the topic of discussion and presentation schedule. Deborah began with an update on project status as follows:

1) Minutes of the 21 September 1993 TRC Meeting were distributed. Please notify Debbie Carlson of any corrections or additions so they can be incorporated.

2) **Confirmation Air Study Workplan:** The workplan was submitted for review on 11/3/93 two week review period. (Navy review only at this time). Comments are requested by 11/19/93. A comment review meeting has been budgeted and will be scheduled if the reviewers and/or comments warrant a meeting.

3) **RFI "Data Gap" Workplan:** The workplan was submitted for review on 10/29/93 with a two week review period. (Navy review only at this time). Comments are requested by 11/15/93. Submission data to regulators is estimated December 1993.

4) **DRMO Cap Construction:** The Phase I geotextile liner is in the process of being installed. Installation occurred between 11/4/93 and 11/11/93. TRC members were welcomed to walk to the DRMO and observe some of the construction. The possibility of Phase II, which will consist of an asphalted portion at the entrance of the DRMO, could be delayed if Phase I goes past 11/30/93 and asphalt season ends.

5) A copy of a RCRA Corrective Action Schedule developed by Northern Division was distributed. The schedule was trying to document the entire timeline of the project with all past, current and future investigations. (FY 94 dates are projections only). Debbie welcomed any dates or phases missed to complete schedule and state she was also looking into different types of software for improved visual quality of schedule.

Deborah then turned the floor over to Bob Johnson for a brief progress report. After Bob Johnson's report, Deborah Carlson introduced Eileen Mahoney of Mahoney Associates to begin the formal presentation of the On-Shore MPS.

PRESENTATION OVERVIEW: ON-SHORE MEDIA PROTECTION STANDARDS

Eileen Mahoney distributed handouts containing details of the presentation to each member of the TRC. The following is a brief summary of Eileen's presentation.

Eileen began by introducing the Media Protection Standard (MPS) in the context of a risk-based evaluation. The objective of developing Media Protection Standards is to be protective of human health and the environment. Eileen then reviewed the guidance documents and regulatory framework for performing the MPS evaluation. She then followed this with a discussion of the methods and procedures she employed in developing the On-Shore MPS. Eileen discussed the use of background data and the procedures for comparison of data to risk goals and risk factors.

Her presentation then moved on to a discussion of the results of her evaluation of each media: soil, groundwater, surface water, sediment and air. For each media, Eileen compared the data to applicable regulatory standards and/or guidelines and background data, if available. She then described how she developed concentrations which met the risk goals.

Finally, Eileen presented the results of her calculations and concluded the presentation with a slide summarizing SWMUS which may require remediation of some sort to be protective of human health. These SWMUS include the DRMO and quarters SN and 68.

QUESTIONS

Questions were asked and answered during and after the presentation. A brief summary of the questions and responses follows:

- Jim Tayon asked if only one (1) sample collected at Quarters S, N & 68 had contaminant concentrations which exceeded background.

  Eileen Mahoney responded that to her best recollection only one sample exceeded background. She added that this should not be too alarming since the risk assumptions are extremely conservative (i.e., children residing there 25-30 years). *(Note: Surface soil sample SS-06 had a concentration of arsenic of 83.8 mg/kg which exceeded background).*

- Bob Johnston asked if the air quality monitoring performed took into account upward versus downwind locations and if so how this was done.

  Steve Urschel responded that the air quality studies included background (upwind) stations and that a meteorological tower located on the Shipyard recorded wind direction so that the data could be evaluated for possible upwind or downwind sources. Mr. Urschel indicated that the sampling was conducted for particulates, volatile and semi-volatile compounds over a 24 hour sampling period.

- A member of the audience asked how the site-specific background samples compared to samples further away that may have been impacted by other contaminants.

  Eileen Mahoney responded that the study took into account regional background data and that comparisons were made between sample results and both site-specific and regional background. *(Site specific was based on both samples taken at the Shipyard and off-base in the surrounding community).*

- Deborah Carlson asked Eileen to explain the use of 10^{-6} and 10^{-5} risk factors in the risk assessment and Media Protection Standards development.

  Eileen Mahoney indicated that the risk factor of 10^{-6} was the "Point of Departure" used by USEPA in the National Contingency Plan (NCP). If a contaminant is found to exceed 10^{-6} then this contaminant must be addressed in the Media Protection Standard proposal. In order to set an acceptable concentration, the regulators routinely use 10^{-5} as the clean-up goal. So the Media Protection Standards are developed to meet a 10^{-5} risk factor for any compound found to exceed the 10^{-6} "Point of Departure."

- Deborah Carlson asked why in the original (draft) MPS the Battery Acid Tank (SUMU 10) was found to pose a risk needing MPS development when in the latest draft this SWMU dropped out.

  Eileen said she was uncertain exactly why it dropped out but some of the numbers were rerun and that may have made the difference. Eileen said she would double check the calculations. *(Note: After review of the subsurface soil data for SWMU 10 and an evaluation of the risk posed for future occupational exposure, it was determined that no individual contaminants required development of Media Protection Standard).*

- Bob Johnson asked where samples were collected for use in the risk assessment for groundwater.

  Steve Urschel responded that there was an evaluation of fresh water wells at the Jamaica Island Landfill (JILF) which are not being used as a source of drinking water but would be preferable to salt water wells for that purpose.

  Ernest Waterman added that the USEPA allowed evaluation of only the fresh water wells because no one is expected to use the salt water wells as a source of drinking water. The JILF was the only SWMU where fresh water wells are located.

  Eileen Mahoney added that a qualitative risk analysis was performed on the brackish and saline wells at the JILF for comparative purposes.

- Bob Johnston asked if the most direct connection between the off-shore and on-shore studies was associated with the groundwater seeps being investigated at the Shipyard.

  Ernest Waterman responded that the JILF is the control point for release to the river. If these releases may be detrimental then MPS must account for potential impacts of the river as well as current and future impacts on-shore.

- Nancy Beardsley asked about a table *(Table 1-2 beginning on page 1-17)* in the MPS which described statistical background values.

  Eileen Mahoney stated that a statistics book, referenced in the MPS Proposal, was used to estimate the 99th percentile of the range of background concentrations. This was done because the number of samples collected is only a small sample set and may not represent the entire variation in sample results expected in the natural setting.

This completed the question and answer session and Deborah Carlson moved into a discussion of the regulatory process including a brief discussion of the Public Hearing. Deborah indicated that an "informal" public workshop was tentatively scheduled for January 25th and would cover the On-Shore Media Protection Standard development. This would allow the public to ask questions and receive answers before the Public Hearing.

Further discussions were pursued with regard to the format and date for the Public Hearing. No final decisions were made.

Jim Tayon then announced that Maria Barth was elected as a Town Council Chairperson and was resigning from the Technical Review Committee (TRC). Jim asked for recommendations for someone to replace Mrs. Barth on the TRC. Requirements are that the person be a U.S. citizen and have time available to review the technical documents. Someone from the local community would be preferred.

The meeting was adjourned at 12:30 p.m.

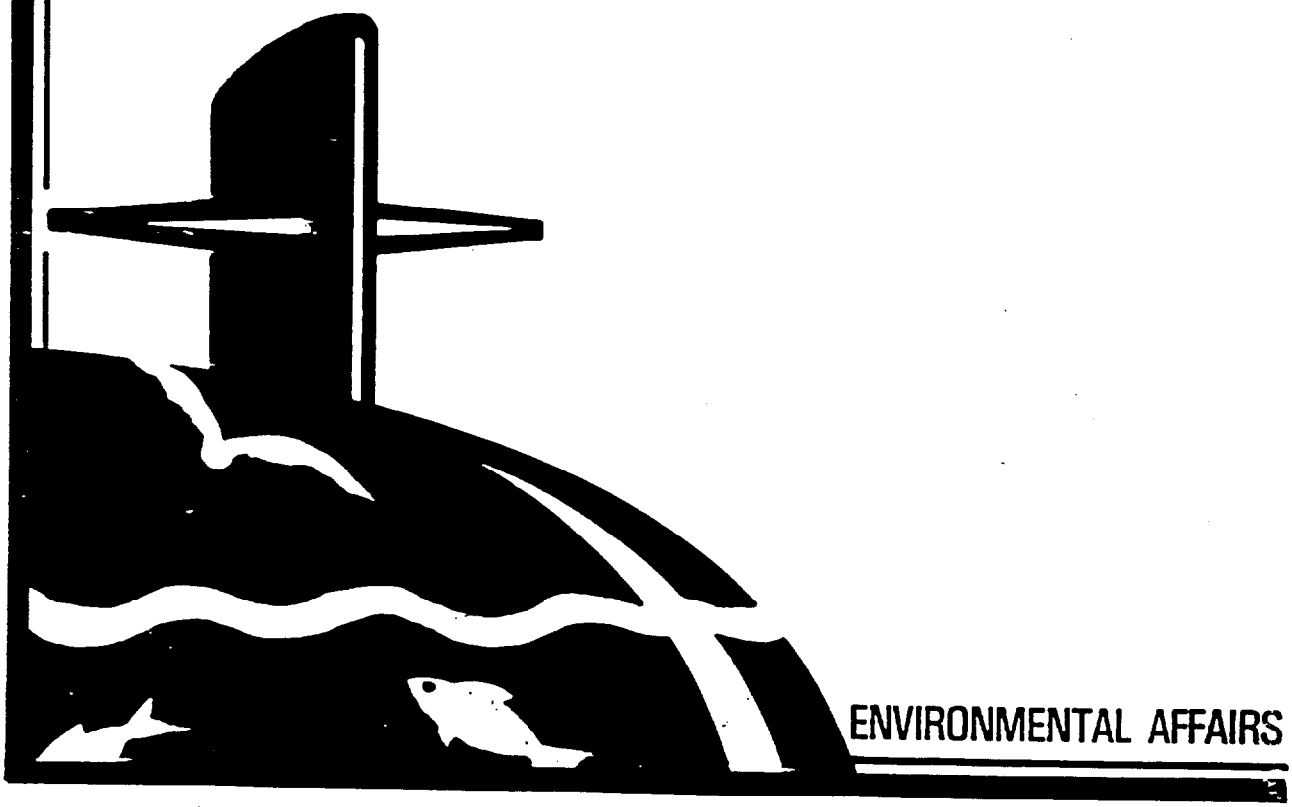
TRC MEETING AGENDA

TUESDAY, NOVEMBER 9, 1993

TIME: 10:30 AM - 12:30 PM
LOCATION: Shipyard Museum, Bldg 156

10:30	Introduction/Opening Remarks
10:35 - 10:45	Status update on the RCRA Facility Investigations Presentor: Debbie Carlson, RPM Northern Division
10:45 - 11:45	On-Shore Media Protection Standards Proposal Presentor: Dr. Eileen Mahoney, Toxicologist Mahoney Associates
11:45 - 12:15	Questions and Answers
12:15 - 12:30	Open Discussion/Closing Remarks

TECHNICAL REVIEW COMMITTEE MEETING NOVEMBER 9, 1993



ENVIRONMENTAL AFFAIRS

PORTSMOUTH NAVAL SHIPYARD

PROPOSED MEDIA PROTECTION STANDARDS FOR ON-SHORE MEDIA

BASED ON HUMAN HEALTH RISK ASSESSMENT

FOR THE

PORTSMOUTH NAVAL SHIPYARD

KITTERY, MAINE

Presented to:

Technical Review Committee
Portsmouth Naval Shipyard
November 9, 1993

Presented by:

Eileen M. Mahoney, Ph.D.
E. Mahoney Associates, Inc.
Philadelphia, PA 19118

TRC MEETING OVERHEADS

ACRONYMS/ABBREVIATIONS

Acronym/Abbreviation		Definitions
ARAR		Applicable or relevant and appropriate requirement of environmental quality.
	Background	Concentrations of chemicals that are present in the environment naturally or due to human-made, non-site sources.
	Carcinogen	A substance which causes cancer.
CERCLA		Comprehensive Environmental Response Compensation and Liability Act of 1980.
DRMO		Defense Reutilization Management Office
HI	Hazard Index	The sum of more than one hazard quotient for multiple substances.
HQ	Hazard Quotient	The ratio of a single substance exposure level over a specified time period to a reference dose for that substance derived from a similar exposure period.
HSWA		Hazardous and Solid Waste Amendments Permit
	Inorganics	Substances not containing carbon as an essential element (*e.g.: Lead, Mercury, Arsenic, Cadmium, Copper*).
JILF		Jamaica Island Landfill
MCLs		Maximum Containment Levels (Federal Drinking Water Standards).

ACRONYMS/ABBREVIATIONS (continued)

Acronym/Abbreviation		Definitions
MEDEP		Maine Department of Environmental Protection
MEGs		Maximum Exposure Guidelines (Maine Drinking Water Guidelines).
mg/kg	milligram per kilogram	Unit of measurement.
MPS		Media Protection Standards
PAHs	Polyaromatic Hydrocarbons	Class of compounds containing two or more fused benzene rings; semi-volatile; associated with petroleum products.
PCBs	Polychlorinated Biphenyls	Probable human carcinogens; The general population is primarily exposed by the oral route (primarily by consumption of contaminated fish).
PNS		Portsmouth Naval Shipyard.
SWMUs		Solid Waste Management Units
SVOCs	Semi-Volatile Organic Compounds	Class of compounds which do not tend to easily go into vapor state. Includes PAHs, PCBs, pesticides.
USEPA		United States Environmental Protection Agency
VOCs	Volatile Organic Compounds	Class of compounds which tend to easily go into the vapor state.

TABLE OF CONTENTS

INTRODUCTION

- Prepared in accordance with the Hazardous and Solid Waste Amendments (HSWA) Permit, issued by USEPA.

- Document proposes Media Protection Standards (cleanup goals) which are **RISK BASED**

- Proposed cleanup goals are prepared based on a human health risk analysis of the Shipyard for current and future uses; and represent levels which do not pose unacceptable health risks (consistent with USEPA and MEDEP guidelines, 10^{-5})

OBJECTIVES

- To propose media protection standards which are protective of human health for each medium (Soil, Groundwater, Air, Surface Water, Sediment).

- To propose standards for all contaminants released from all 13 Solid Waste Management Units (SWMUs) identified in the HSWA Permit.

METHODOLOGY USED IN DEVELOPING MEDIA PROTECTION STANDARDS

1. Identification of Risks Exceeding Regulatory Guidelines

2. Comparison to Site-Specific Background Concentrations

3. Determination of chemical concentrations which represent safe exposures

SOILS METHODOLOGY

1. Identification of Risks Exceeding Risk Guidelines

Carcinogens

Risk = 10^{-6} USEPA (point of departure)
Risk = 10^{-5} MEDEP

Non-Carcinogens

Hazard Index = 1.0 USEPA, MEDEP

- Risk Estimates developed in Human Health Risk Assessment, On-Shore Portion

- Maximum measured concentrations were used for calculating risk estimates

- Any chemical exceeding these guidelines for any medium, any exposure pathway, was identified for media protection standards

SOILS METHODOLOGY, CONTINUED

2. Comparison to Background Levels

- Site-specific background soil samples used to characterize background soil conditions at the Shipyard.

- Background soil data then compared to measured maximum concentrations for soils at SWMUs

SOILS METHODOLOGY, CONTINUED

3. Comparison to Risk Goals

- Carcinogens

  Risk goal = 10^{-5} for proposed media protection standards, USEPA and MEDEP.

  Chemical concentrations corresponding to these risk goals were derived for all which exceeded risk guidelines.

- Non-Carcinogens

  Risk goal = 10 for Hazard Index, based on USEPA Region I guidance.

  Chemical concentrations were derived which correspond to this risk goal, for all chemicals exceeding risk guidelines.

SOILS PROPOSED MEDIA PROTECTION STANDARDS

Summary table compares:

1. Maximum Measured Concentrations
2. Site-Specific Background Concentration
3. Risk Goal (10^{-5}) or HI Goal (10.0) Concentration

Proposed Media Protection Standard

Proposes the concentration corresponding to the above Risk Goal (10^{-5} or 1.0); unless background concentrations are higher.

GROUNDWATER METHODOLOGY

Currently, there are NO risks due to groundwater because there is NO exposure to groundwater.

1. Comparison to Risk Guidelines

   10^{-6} Carcinogens USEPA

   10^{-5} Carcinogens MEDEP

   1.0 Non-Carcinogens USEPA; MEDEP

2. Comparison to Drinking Water Standards

   - ALL chemicals which exceeded Risk Guidelines compared to:

     Federal MCLs (Maximum Containment Levels) drinking water standards

     Maine MEGs (Maximum Exposure Guidelines)

GROUNDWATER METHODOLOGY, CONTINUED

3. Comparison to Risk Goals set for Media Protection Standards

   - USEPA, MEDEP 10^{-5} carcinogens
   - 10.0 for non-carcinogens
   - Chemical concentrations corresponding to these Risk Goals were derived and presented in proposal

GROUNDWATER PROPOSED MEDIA PROTECTION STANDARDS

- No Human Health Risks Resulting from Groundwater ∴ No Media Protection Standards are Required to be Developed

- MPS were Developed Assuming Potable Groundwater for Comparative Purposes

- Potential Impact of Groundwater on Off-Shore Areas is Not Yet Complete and May Require Media Protection Standard

AIR METHODOLOGY

1. Identification of Risks Exceeding Guidelines

   10^{-6} USEPA Carcinogens

   10^{-5} MEDEP Carcinogens

   1.0 for Non-Carcinogens USEPA; MEDEP

2. Comparison to Upwind Reference Concentrations for chemicals exceeding risk guidelines. Chemical concentrations in air at upwind reference locations were compared to downwind locations.

3. Comparison to Risk Goal Concentrations Air Concentrations corresponding to risk goal value of 10^{-5} (carcinogens) and 10.0 (non-carcinogens) were assessed.

4. Media Protection Standards were proposed for Number 3 above, unless background (reference value) is higher.

SURFACE WATER, SEDIMENT (PONDS)

No risks, therefore no need for Media Protection Standards.

RESULTS

Soils

- Media Protection Standards Were Proposed for

  DRMO, SWMU #6
  JILF, SWMU #8
  Former Child Development Center
  Quarters S, N and 68
  Mercury Burial Site SWMU #9
  Battery Acid Tank, SWMU #10
  Acid/Alkaline Drain Tank, SWMU #21

- Only **TWO** Areas Exceed Proposed Protection Standards

  DRMO, SWMU #6
  Quarters S, N and 68

RESULTS, CONTINUED

Air

- Media Protection Standards Were Proposed for:

  DRMO, SWMU #6
  JILF, SWMU #8
  Mercury Burial Sites, SWMU #9
  Former Child Development Center
  Quarters S, N and 68

- There were **NO** Areas Exceeding Proposed Media Protection Standards

RESULTS, CONTINUED

Groundwater

- There are **NO** Risks Associated With Groundwater

- Comparative Media Protection Standards for Drinking Water Were Exceeded by:

  Beryllium
  Lead
  Arochlors (PCBs)

CONCLUSIONS

The Only Areas Exceeding Proposed Media Protection Standards Are The Following:

SWMU	MEDIUM	ANALYTE
#6; DRMO	Surface Soils	Cadmium Lead Arochlor 1254 Benzo(a)pyrene
#6; DRMO	Subsurface Soils	Lead
NON-SWMU AREA		
Quarters S, N and 68	Surface Soils	Arsenic