

LONG BEACH NAVAL COMPLEX RESTORATION ADVISORY BOARD MEETING NOTICE

To All RAB Members and interested parties:

The next LBNC RAB Meeting will be held on Tuesday, 19 March 1996 at 7:00 P.M. at the Long Beach Naval Shipyard, Building 300, 1st Floor (entering through Gate 5).

The Agenda for this RAB meeting will include:

- Workshop - IRP Site 7 (the Harbor)
- Membership Status discussion
- Approval of Responses to RAB Comments on the draft BCP
- Status of Reuse and Disposal of the NAVSTA Long Beach

RAB Members are requested to review the enclosed 20 February 1996 Minutes, and provide any corrections at the 19 March 1996 meeting.

If you have any questions or comments about the LBNC RAB, please feel free to contact:

Alan K. Lee
BRAC Environmental Coordinator, Naval Station
619-532-1250
or
Anna Ulaszewski
BRAC Environmental Coordinator, Naval Shipyard
(310) 547-7868
or
Ernie McBride
LBNSY Public Affairs Officer
(310) 547-7798

ENCLOSURE

RESTORATION ADVISORY BOARD
MEETING MINUTES

DATED 20 FEBRUARY 1996

IS ENTERED IN THE DATABASE AND FILED AT
ADMINISTRATIVE RECORD NO. N68311.000720

RESTORATION ADVISORY BOARD (RAB) MEETING
Long Beach Naval Shipyard, Building 300, 1st Floor
19 March 1996

AGENDA

- 7:00 P.M. Administrative Issues - Chair: Donna DiRocco
- Approval of 20 February 1996 Meeting Minutes
 - Approval of Responses to RAB Comments on the draft BCP
 - Membership Status discussion
 - Receive comments on the EE/CA for IRP Site 3
- 7:30 P.M. SWDIV BRAC Program Office- Disposal Process and Reuse Status
- A representative from the BRAC Program office will discuss the disposal process and the status of reuse at the former Naval Station Long Beach.
- 8:00 P.M Workshop - IRP Site 7 (the Harbor)
- Mr. Omer Kadaster, CTO Leader, will present the preliminary results of the Remedial Investigation for the West Basin - Long Beach Harbor (IRP Site 7).
- 8:30 P.M. Open Meeting to RAB members and members of the audience
- 9:00 P.M. Adjourn

**LONG BEACH NAVAL COMPLEX
RESTORATION ADVISORY BOARD
MINUTES FROM 19 MARCH 1996 MEETING**

The Long Beach Naval Complex held a Restoration Advisory Board (RAB) meeting on 19 March 1996 at 7:00 P.M. in Building 300, 1st Floor, Long Beach Naval Shipyard, Long Beach, California.

RAB ATTENDANCE:

Alan Lee - Present
Anna Ulaszewski - Present
Martin Hausladen- Present
Alvaro Gutierrez - Present
Dan Cartagena - Present
Betsy Foley - Present
Bob Kanter - Present
Donna DiRocco - Present
Bill Forrester - Absent (Resigned)
Joan Greenwood - Present
Bob Hamm - Absent
Howard Hargrove - Present
Richard Landgraff - Present
Don May - Present
Theresa Dodge - Present
David Sundstrom - Present
Maria Ramirez - Present
Karl A. Tiedemann - Present
Roberta Johnson - Present
John Essington - Present
Tom Ferro - Present
Jerry Caligiuri - Present
Christopher Lubner - Present
Lawrence Pasta - Absent

OTHERS PRESENT:

Kathy C. Stevens, BNI, Technical Support
Krish Kapur, BNI Project Manager
Braden J. Phillips, City of Long Beach
Tom McDonnell, Brown & Caldwell
CDR Jim Owens
Jennifer Rich, DTSC
Serge Baghdikian, BNI
Omer Kadaster, Kleinfelder
Ernest McBride, LBNSY PAO
Mike Radecki, SWDIV
Faiq Aljabi, SWDIV
John Hill, BRAC Office
Louis Misko, BRAC Office

Kathy Leaf, Community

MEETING BEGAN AT 7 PM - Donna DiRocco, Community Co-Chair presiding.

The RAB members and audience were reminded to please sign in - *"The sign-in sheet is the official record of attendance for each RAB meeting. If you do not sign in, you did not attend the meeting."*

Administrative Issues

The RAB meeting minutes of 20 February 1996 were approved with corrections.

The Community Co-chair announced that Bill Forrester resigned his position on the RAB. As a result, one of the two alternates Jordan Stoyanoff will replace Bill Forrester.

The responses to the RAB's comments on the draft BRAC Cleanup Plan (BCP) were approved. Richard Landgraff moved for approval and Howard Hargrove seconded the motion.

David Sundstrom lead a discussion regarding RAB attendance and commitment. The overall membership attendance was reviewed and the RAB members were encouraged to make a future commitment regarding their individual participation on the RAB.

Comments - Engineering Evaluation/Cost Analysis for IRP Site 3

The Chair asked if there were any comments on the EE/CA for IRP Site 3.

Karl Tiedemann asked who would do the cleanup. The Navy Remedial Action Contractor (RAC) for the CLEAN work is OHM. OHM will do the remedial action work for IRP Site 3.

No written comments on the EE/CA were collected.

PRESENTATION - Disposal Process and Reuse Status

Mr. John Hill, SWDIV representative, presented an overview of the BRAC disposal process and Mr. Louis Misko, also from SWDIV, presented the status of reuse at the former Naval Station, Long Beach.

WORKSHOP - Draft Remedial Investigation report for IRP Site 7 (The Harbor)

Mr. Omer Kadaster presented the results of the remedial investigation report for IRP Site 7. Mr. Kadaster answered questions from the audience during the presentation and stayed after the meeting to further answer questions of the RAB.

The RAB agreed at a previous meeting that they wanted to only review the Executive Summary from the larger environmental documents. The RAB received the Executive Summary and to further assist them, Chapters 1 (Introduction) and 7 (Conclusions) in their pre-meeting package. The entire 7-volume document can be found in the LBNC Information Repository, the Long Beach Public Library.

Any written comments on this document are due at the 16 April 1996 RAB meeting.

Open Meeting to RAB Members and Members of the Audience

The new RAB members were incorporated into the existing document review groups. A list of the new document review groups will be passed out at the 16 April 1996 RAB meeting.

The meeting was adjourned at 9:30 P.M.

The next LBNC RAB meeting is scheduled for Tuesday, 16 April 1996 at 7:00 P.M. at the Long Beach Naval Shipyard, Building 300, 1st floor, Long Beach, California.

These minutes were recorded by Kathy C. Stevens (of BNI, the CLEAN II Contractor), acting as the RAB Technical Support, and reviewed and approved by all members of the Long Beach Naval Complex Restoration Advisory Board.

REMEDIAL INVESTIGATION
LONG BEACH NAVAL COMPLEX
IRP SITE 7 - HARBOR
19 March 1996

OVERVIEW

■ *Background*

- *Agency Involvement*
- *Objectives*
- *Sediment characterization*
- *Human health assessment*
- *Statistics*

BACKGROUND

- *Surrounded by Naval Station, the Navy Mole, and the Naval Shipyard*
- *Shared use by Naval Station and Naval Shipyard*
- *Approximately 700 Acres, water depth 45 feet*
- *Piers for berthing and maintenance*
- *Defense Fuel Support Point (Pier 12)*
- *Historically limited access for fishing; no swimming*
- *Historical discharges into West Basin:*
 - *Sewer outfalls*
 - *Storm drain discharges*
 - *Discharges from ships and piers*
- *Multiple Agencies*

AGENCIES

- *California Environmental Protection Agency - Department of Toxic Substances Control (Cal-EPA DTSC) (State Lead Agency)*
- *California Regional Water Quality Control Board (RWQCB)*
- *U.S. Environmental Protection Agency (U.S. EPA)*
- *National Oceanic and Atmospheric Administration (NOAA)*
- *U.S. Fish and Wildlife Service (USF&W)*
- *California Department of Fish and Game (CDF&G)*

OBJECTIVES

- *Assess sediment toxicity*
- *Assess whether toxicity of sediments pose risk to ecology*
- *Assessment of human health - consumption of fish to recreational and subsistence anglers.*

DESCRIPTION OF WORK

- *Prepared and implemented plans for sediment and fish sampling and analysis, and risk assessment methodologies*
- *Sediment sampling beneath piers and in open water (typically upper 10 cm or 4 inches)*
- *Fish collection (whole body, fillet, and bile)*
- *Benthic infaunal invertebrate collection*

DESCRIPTION OF WORK (continued)

- ***Laboratory Analysis***
 - *Physical measurements (grain size & organic carbon)*
 - *Chemistry (metals, butyltins, pesticides, PAHs, PCBs, organics)*
 - *Bioassays (acute, chronic, subchronic)*
 - *Clam bioaccumulation*
 - *Benthic community*
 - *Fish chemistry (whole body, fillet, bile)*

- ***Verification, validation and management of data***

- ***Data evaluation***

- ***Statistical analyses***

- ***Risk assessment***
(Human Health / Focused Ecological Risk Assessment)

- ***Assess whether mitigation is needed***

- ***Prepare Remedial Investigation Report***
(Draft RI Report currently being reviewed by Agencies)

CHARACTERIZATION APPROACH

- *Physical characteristics (grain size & organic carbon) affect the toxicity of sediments and distribution of chemicals in sediments - provided an understanding of the general character of sediments*
- *Chemical analyses provided measurements of chemical distribution in sediments*
- *Bioaccumulation allowed evaluations of the potential for chemical uptake in tissues of marine organisms from sediments*
- *Benthic community analysis provided an assessment of infaunal invertebrates found in sediments. These organisms are sensitive to and useful indicators of disturbances to the benthic environment*
- *Bioassay tests provided an assessment of the potential toxicological effects of chemicals in sediments*

DATA EVALUATION

Innovative techniques were developed and used to evaluate data, characterize the West Basin, assess risk and develop conclusions:

- *Triad - chemistry, biology, benthic*
- *Sediment Evaluation Zones (SEZs) - clustering of data, develop subareas of “sameness” based on physical and chemical measurements*
- *Evaluation Matrix - assess whether any SEZ is an area of potential ecological concern (AOPEC)*

DATA EVALUATION (continued)

Sediment Evaluation Zones:

- *Subareas within West Basin having sampling stations with similar physical and chemical characteristics*
- *Multiple stations within each SEZ, allowing for more robust statistical analysis*
- *Included chemicals that were detected in at least 50 percent of West Basin stations*
- *Twenty-four variables were used in the analyses to develop SEZs*
- *Cluster analysis results indicated eight SEZs in West Basin*

Sediment Evaluation Zones (continued):

- *None of the pesticides or SVOCs were statistically significantly greater at SEZs than at the reference stations*
- *Metals concentrations were generally greater at SEZs that were located beneath and adjacent to piers*
- *PAH concentrations at some of the SEZs were statistically significantly higher than at the reference stations*
- *PCB concentrations (as Aroclor-1260) at many of the SEZs were statistically significantly greater than the reference stations*

Sediment Evaluation Zones (continued):

- *Only SEZs B, G & H showed statistically significantly greater bioassay toxicity (echinoderm development) when compared to reference stations*
- *None of the SEZs showed a statistically significant adverse effect to the benthic infaunal community (community indices and species composition) when compared to the reference stations*
- *Most SEZs were dominated by benthic infaunal species indicating healthy or semi-healthy conditions; indicator species of stressed conditions were absent*

DATA EVALUATION (continued)

Evaluation Matrix:

- *Used in defining SEZs potentially requiring further characterization*
- *Pre-established potential combinations of results and the resultant SEZ status*
- *Allowed summarizing and assembling results of SEZ evaluation in four categories:*
 - *chemical concentrations*
 - *toxicity effects*
 - *benthic infauna characteristics*
 - *bioaccumulation patterns*
- *Three of the eight SEZs shown as AOPECs: B, G & H*

CONCLUSIONS RELATED TO SEDIMENTS

- *Ecological Risk Assessment was used to evaluate the three AOPECs*
- *The results of the ecological risk assessment were incorporated into the Evaluation Matrix*
- *SEZs B, G & H were not considered as areas of ecological concern (AOECs) because:*
 - *concentrations of these chemicals appear to be below levels associated with adverse biological / ecological response*
 - *benthic infauna appear not to be adversely affected*
- *Remedial Investigation proposed recommendation: No Action*

HUMAN HEALTH ASSESSMENT

- *No appreciable difference in chemical concentrations in California halibut and white croaker between West Basin and San Pedro Bay and Long Beach Harbor*
- *Findings are consistent with State advisories for consumption of fish in California Bight*

STATISTICAL TECHNIQUES

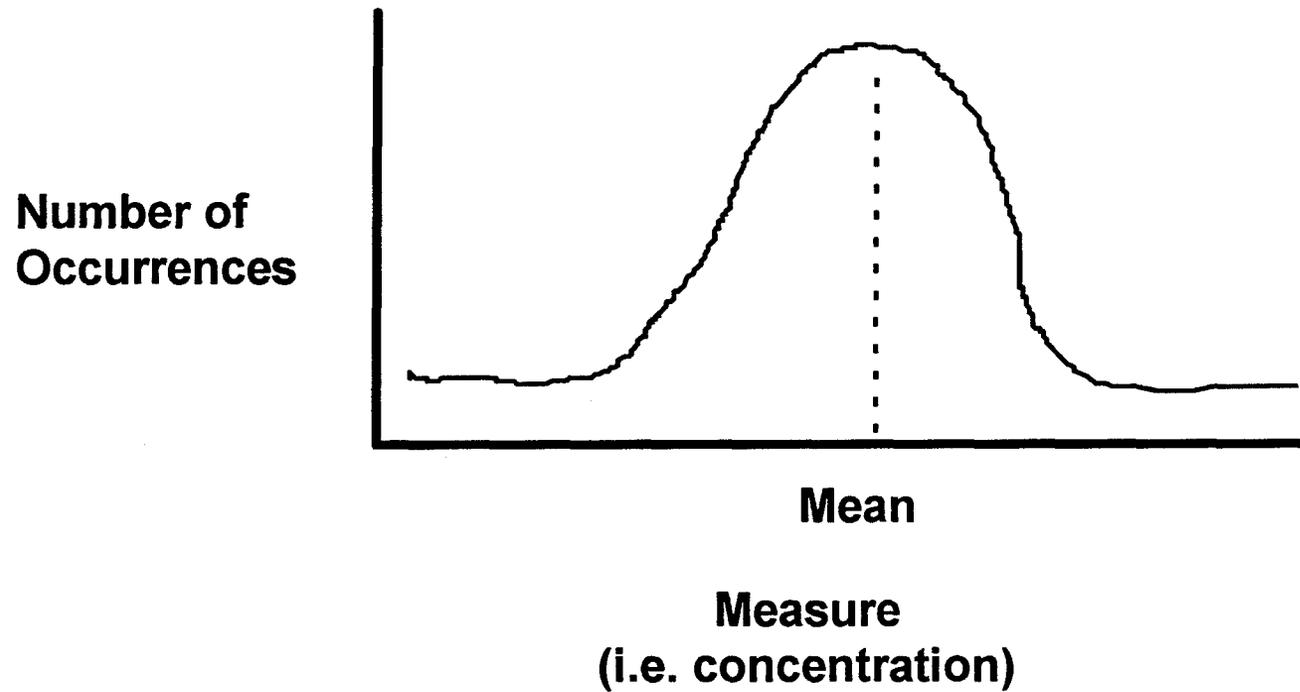
INTRODUCTION:

- *More than 16,400 pieces of data acquired for this RI*
- *Statistical techniques used in evaluating this massive database*
- *A scientific study of numerical data based on variation in nature*
- *The statistical process is not really different from ordinary disciplined scientific thought*

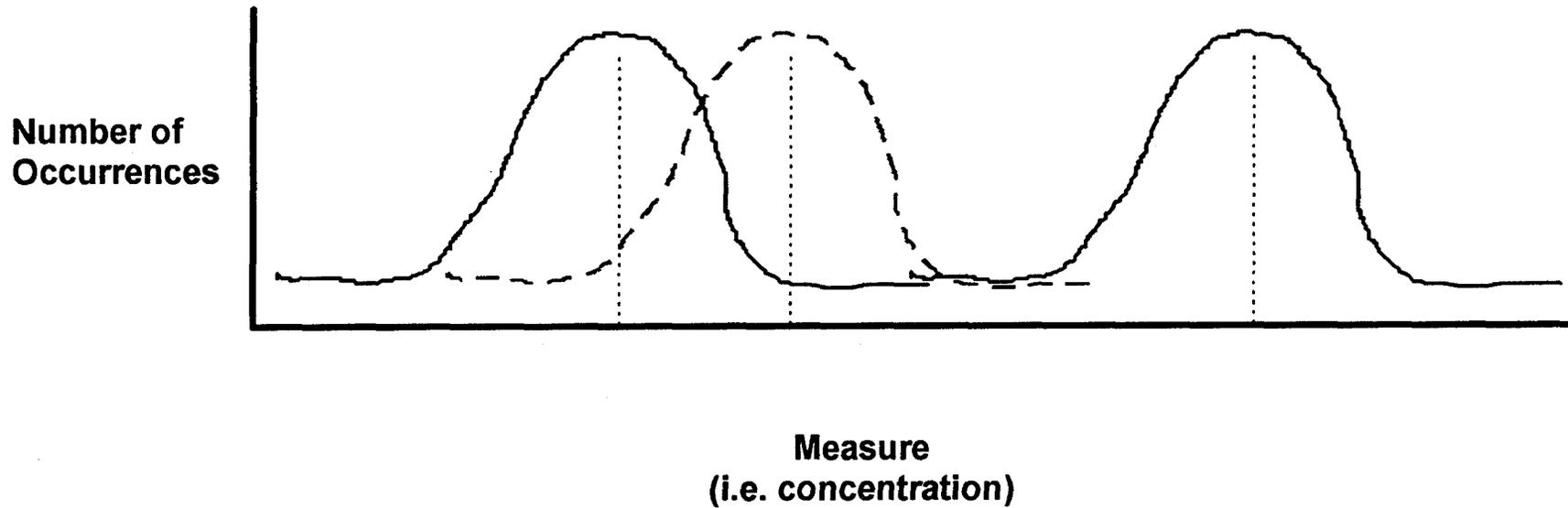
TYPES OF STATISTICS USED IN THE RI

- *General descriptive*
- *Hypothesis Testing*
- *Associations*
- *Predictive Relationships*

General Descriptive Statistics



Hypothesis Testing by Analysis of Variance (ANOVA)



ANALYSES OF PATTERNS WITHIN THE DATA

- *Associations between variables (correlation)*
- *Predictive Relationships (Regression)*
 - *can the concentration of one chemical variable be used to predict the value of a biological variable?*
- *Patterns among the stations*
 - *Cluster analysis*

CLUSTER ANALYSIS - "DENDROGRAM" EXAMPLE

Distance
Between Clusters

