STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, *Governor*

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Region 4
245 West Broadway, Suite 350
Long Beach, CA 90802-4444

N68311.000367
NAVSTA LONG BEACH
SSIC #5090.3

July 9, 1993

Captain Barry Janoff
Commander Long Beach Naval Shipyard
300 Skipjack Road
Long Beach, California 90822-5099

Lieutenant Commander J.L. Snyder
Civil Engineer Corps, U.S. Navy
Long Beach Naval Station
Long Beach, California 90822-5000

Dear Captain Janoff and Commander Snyder:

DRAFT RCRA FACILITY INVESTIGATION REPORTS (INSTALLATION RESTORATION PROGRAM REMEDIAL INVESTIGATION/FEASIBILITY REPORTS): LONG BEACH NAVAL SHIPYARD AND LONG BEACH NAVAL STATION (EPA ID NO. CA6170023109)

The California Department of Toxic Substances Control (Department) has completed its review of the Draft Remedial Investigation/Feasibility Study (RI/FS) Reports dated April 30, 1993 for the Long Beach Naval Shipyard and Long Beach Naval Station. The RI/FS Reports were submitted in accordance with the RCRA Corrective Action requirements specified in the Hazardous Waste Facility Permit issued to the Long Beach Naval Shipyard. The RI/FS Reports propose a strategy for the additional investigation, including sampling and analysis, of thirteen (13) previously identified hazardous waste contaminated sites at the facility.

The Department has compiled comments from both its internal technical staff and from the Los Angeles Regional Water Quality Control Board (RWQCB). The comments are included as Attachments A-G of this letter. The following list provides the name and position of the specific individual whose comments are included within each attachment:

Attachment A: Craig A. O'Rourke
Hazardous Materials Specialist
Facility Permitting Branch
Department, Region 4

recycled paper

Attachment B: Allen R. Winans, C.E.G.
Associate Engineering Geologist
Program Coordination and Policy Dev. Branch
Department, Sacramento

Attachment C: John P. Christopher, Ph.D., D.A.B.T.
Staff Toxicologist
Human and Ecological Risk Section
Office of Scientific Affairs
Department, Sacramento

Attachment D: J. Michael Lyons, Chief
Surveillance Unit
RWQCB
Los Angeles Region

Attachment E: J.E. Ross, Unit Chief
Site Cleanup Unit
RWQCB
Los Angeles Region

Attachment F: Alvaro Guiterrez
Waste Management Engineer
Base Closure Branch
Department, Region 4

Attachment G: Jerry D. Early
Associate Industrial Hygienist
Department, Region 3

The Department understands that the Navy has tentatively scheduled a meeting for 0900 July 19, 1993 at the CH2M Hill office in Santa Ana to discuss and resolve the attached comments. The Department will confirm the attendance, or appropriate representation, for this meeting with the individuals who commented.

Upon submittal of the Final RI/FS Report, please attach a cover letter to the Reports which includes a list of revisions from the draft editions. The list of revisions must clearly identify all the changes by both section and page numbers. Please submit a copy of the Final RI/FS to all individuals whose comments are included as attachments with this letter.

Any questions regarding any of the comments included with this letter should be directed to Mr. Craig O'Rourke (Regulatory Project Manager for the Long Beach Naval Complex) of my staff for appropriate action. Mr. O'Rourke can be reached at 590-4875.

Sincerely,

D. R. Rege

D. (Anand) R. Rege
Unit Chief
Facility Permitting Branch

Attachments (7)

cc: Mr. Albert Arellano, Jr., P.E.
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Department of Toxic Substances Control
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Long Beach, California 90802

Mr. Craig O'Rourke
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Mr. John Christopher
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Mr. Lester Kaufman, Chief
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San Francisco, California 94105

bcc: Karen Baker
Mohinder Sandhu
Paula Rasmussen

ATTACHMENT A

GENERAL AND SPECIFIC COMMENTS ON DRAFT RI/FS WORKPLAN AND SAMPLING AND ANALYSIS PLAN: LONG BEACH NAVAL COMPLEX (LONG BEACH NAVAL STATION AND SHIPYARD)

DRAFT RI/FS WORKPLAN: LONG BEACH NAVAL COMPLEX

GENERAL COMMENTS

1. The Long Beach Naval Shipyard Commander and Personnel at Southwest Division have expressed a strong willingness and desire to limit the number of phases of investigation for the facility. The Department also supports this proposal. However, the RI/FS Workplan as it is proposed seems too general and is not directed toward defining lateral and/or vertical extent of contamination.

2. Site 4 Data Quality Objectives (DQOs) should include all of Site 4. Specifically, the area east of the jogging path to the inner harbor sea wall should be investigated for subsurface and groundwater contamination.

3. Historical aerial photograph reviews are proposed prior to selecting sampling points at a number of sites. The Department should be advised of all meetings scheduled to review and discuss aerial photographs.

4. Due to the numerous abandoned oil wells in the area, particularly along seaside drive, the Gasper Aquifer should be characterized because of the pathway provided by the abandoned wells for contaminants from the surficial groundwater.

DRAFT RI/FS WORKPLAN - Long Beach Naval Shipyard

SPECIFIC COMMENTS

1. **Page 1-19, Table 1-1** Change Base Closure dates in the Table to 1994.

2. **Page 1-23. Section 1.5** The last paragraph refers to six appendices, but only five are referenced and included in the workplan.

3. **Page 2-6, Section 2.3.1** Refer to RWQCBs comments regarding standards to be evaluated as potential ARARS (i.e. Bays and Estuaries standards vs. RWQCB 88-63 standards).

4. **Page 3-74, Section 3.2.3** Wastewater discharge to public owned treatment works (POTWs) are typically regulated by a Wastewater Discharge Permit from the local agency. The report refers to a NPDES permit, please clarify this reference.

5. **Page 3-85, Section 3.2.5.2** Reference to terrestrial wildlife at Long Beach Naval Complex should include unimproved Site 6.

6. **Page 3-103, Table 3-8** Should include solvents under waste description for Site 3.

7. **Page 3-118, Section 3.4.2** The background groundwater samples from B-22 may be influenced by upgradient contamination at Reeves Field. Facility wide groundwater sampling and analysis should provide a more accurate characterization of true background groundwater conditions.

8. **Page 8-2, Section 8.2.2** The soil analysis for Site 13 refers to "total petroleum hydrocarbon". From Table 8-1 it appears method 418.1 was run, therefore, the proper name for the analysis method should be "total recoverable petroleum hydrocarbons (TRPH)".

9. **Page 10-23, Section 10.9** Monthly progress reports should be supplied to DTSC.

DRAFT RI/FS WORKPLAN - Long Beach Naval Station

SPECIFIC COMMENTS

1. **Page 1-19, Section 1.3.2** Update closure status of Long Beach Naval Station.

2. **Page 3-73, Section 3.2.3** NPDES Permit? or WWD Permit?

3. **Page 3-103, Table 3.8** Add solvents to Site 3 under "Waste Description"

4. **Page 5-43, Table 5-7** As discussed in the DQO meeting an underwater survey is to be conducted on the outer side of the mole. This should be stated in the table (it is acceptable to reference the outer mole underwater survey for Site 3 if its extent will include Site 4).

5. **Page 6-25, Section 6.2.2.1** The word "just" in the second sentence of the last paragraph is unnecessary and makes the sentence unclear.

6. **Page 6-63, Section 6.5** The last sentence of the first paragraph contains a typographical error for the word "depositional".

7. DQOs for Site 4 should include the remainder of Site 4. Specifically, the area East of the jogging path to the inner harbor should be investigated for subsurface and groundwater contamination.

8. **Page 7-27, Section 7.5** Propose multiple well points instead of one MW to confirm the presence or absence of petroleum hydrocarbons.

9. **Page 10-9, Section 10.3** Propose that a copy of the field summary report prepared after the completion of each round of field activities will be sent to DTSC.

DRAFT SAMPLING AND ANALYSIS PLAN: LONG BEACH NAVAL COMPLEX

GENERAL COMMENTS

1. All References to Site 4 should include the area across the entire mole (from the outer harbor edge to the inner harbor sea wall) north of the Servmart sites.

2. Table 2-1 should include solvents under waste description for Site 3.

3. The SAPs should include Tabs for the Specific Sites.

4. Field screening for DNAPLs and PCBs should be considered for sites when qualitative results may be sufficient in preliminary efforts to define the extent of a plume.

5. If sampling and analysis at Site 12 confirm that soil in this area is a concern due to the historical spreading of sand blast grit (tributyltin notwithstanding) in the area, then the extent of sampling for Site 12 may need to be expanded to include areas outside of the drum crushing area. Specifically, areas north of Building 314 toward the northern property boundary of the facility may need to be evaluated.

DRAFT SAMPLING AND ANALYSIS PLAN - Long Beach Naval Station

SPECIFIC COMMENTS

1. **Page 4-11, Table 4-4** "Potential Chemical of Concern" Confirm that constituents shown in parenthesis for Site 3 and Site 6 were not detected above screening values.

2. **Page 4-24, Section 4.4.3** Section 4.4.2 refers to Geophysical Techniques in support of aerial photograph review for Sites 1, 2, 3, and 6A. Section 4.4.3 only refers to Geophysical Techniques for Site 1, 2, and 6A.

3. **Page 4-38, Section 4.5.4** In the first paragraph reference is made to collecting GW samples at depth using well points where vertical contaminant concentrations are required. How will this determination be made?

4. **Page 4-68, Section 4.6.3** How were the locations of the deep CPT boring selected? Provide justification.

5. **Site 3, Page 4-105, Section 4.8.2.1** Subsurface sampling should include analysis for TPH using method 8015M for diesel.

6. **Site 3, Page 4-107, Section 4.8.3** More than one deep well point should be proposed to adequately address the existence of DNAPL contamination and its lateral and vertical extent. Also, this section contains numerous typographical errors.

7. **Site 4** A sixth AOC should be added to the DQOs for Site 4. This should incorporate subsurface soil characterization for appropriate constituents in the area east of the jogging path and north of the alternate Site 1 Servmart location.

8. **Page 4-127, Section 4.10** A grid of temporary well points should be implemented regardless of the analytical results from the one MW. TRPH contamination was verified in the SI investigation. Figure 4-9 Groundwater Investigation Decision Tree should be amended accordingly. Same for Section 4.10.1.2.

No specific comments on the draft Sampling and Analysis Plan (SAP) for Long Beach Naval Shipyard are included from this reviewer. Other than the comments contained in the General Comments for the complex as a whole, the SAP for the shipyard appears to be adequate to sufficiently characterize sites 8-13.

Craig A. O'Rourke
Hazardous Materials Specialist

State of California

Department of Toxic Substances Control

Memorandum

ATTACHMENT B

To: Craig O'Rourke
Site Mitigation Branch
245 West Broadway, Suite 350
Long Beach, California 90802

Date: May 27, 1993

From: Program Coordination and Policy Development Branch
400 P Street, 4th Floor
P.O. Box 806
Sacramento, California 95812-0806

Subject: Long Beach Naval Complex RI/FS Workplan and SAP

INTRODUCTION

Per your request of May 6, 1993 I have reviewed the five documents provided regarding the Long Beach Naval Station and Shipyard: Draft Remedial Investigation / Feasibility (RI/FS) Workplan (both for the Station and the Shipyard), the RI/FS Draft Sampling and Analysis Plan (SAP, also for both the Station and the Shipyard), and the Site 6B Draft Preliminary Assessment Report (PAR), all dated April 30, 1993. These reports were produced for the Navy by CH2M Hill and Jacobs Engineering, and are not signed by a geologist or civil engineer registered by the State of California.

For the RI/FS Workplans, I have not reviewed Appendices concerning other disciplines: Appendix A (ARARs), B (Screening Risk Assessment Methodology), nor C (Leaching Pathway). For the SAPs, I have not reviewed Appendices A (QAPP), nor B (Site Safety and Health Plan). Further, I have not commented on portions of documents dealing with harbor and ocean sediment sampling; though I noticed no obvious problems, my expertise does not include such investigations, so I defer.

The pairs of documents, the RI/FSs and SAPs are nearly identical except for the site-specific sections. In the comments that follow the section numbers are cited for either the RI/FS or the SAP and the comments apply to both RI/FSs or both SAPs. Where a comment applies to only of the documents it is explicitly noted.

CONCLUSIONS

These documents are well-prepared and represent adequate workplans and SAPs for a Phase I investigation, with the exception of the comments below. The PAR provides adequate basis for designing an initial investigation as recommended in the PAR.

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All future documents (including the finalized versions of those reviewed here) containing descriptions of geology, geophysics, ground water chemistry or flow, or engineered features, plans for investigating such, or interpretations of physical conditions must be signed by a geologist or engineer registered by the State of California.

SPECIFIC COMMENTS and RECOMMENDATIONS

RI/FS Workplan

Section 3.4.1 Background Soils

There is no discussion of the relative concentrations of metals, minerals or organics in any samples other than the two chosen as background for screening level purposes. As I related in the meetings, I have reviewed the data for all the samples, plotted graphs for soils and for ground water to identify outliers, and in many cases the concentrations in the two " background " samples are amongst the highest. Sample B-11 is high in Calcium (Ca) and perhaps so in mercury (Hg). Sample B-22 is high in aluminum (Al), barium (Ba), chromium (Cr), copper (Cu), iron (Fe), lead (Pb), nickel (Ni), and vanadium (V).

In contrast, samples B-4, -7, -13A, -14, -15, -16, -44, and -45 all are relatively low in metals, minerals, and organics, yet provide a good range of values upon which to base statistical interpretations of background and use for comparison to screening levels for health-based criteria.

I recommend that the final version of the RI/FS workplan utilize data from the samples that comprise a distinct grouping representing apparently unimpacted soils. All tables displaying the background data, comparisons of the data to screening levels, data re-interpretations and text re-writing should be accomplished before determining the need for further sampling for background. I believe adequate samples representing reasonably expected concentrations in background have already been acquired, but defer final judgement until the existing data have been analyzed and the Navy has developed rationale for further sampling, if such is necessary.

Sampling and Analysis Plan

General comment:

The discussions of ground penetrating radar (GPR), cone penetrometer testing (CPT), and Hydropunch surveys are very open-ended. No mention is made of using any as areal survey tools in grid patterns to locate subsurface features such as trenches or pits, or to resolve fill patterns or stratigraphy. Many pages are devoted to determining health risk from exposures to contaminated soil and ground water, the key to making decisions regarding clean-up locations, methods, and levels. Yet the basic data to define the actual, physical description of the subsurface will never be generated in a detail commensurate the effort involved with risk assessment. GPR is mentioned as a tool to locate underground utilities at proposed boring locations; CPT may be used where well points may be installed; and hydropunch may be used as the vehicle for installing well points. At the technical committee meetings there was discussion that GPR would be tested to see if it was useful for this site. The testing may have been conducted. If so, the technical committee should have access to the printouts and grid locations, so that we may make informed decisions regarding the use of GPR.

I recommend maximum use be made of survey techniques such as GPR, CPT and Hydropunch to define the subsurface in three dimensions, the sooner the better. Phase 2 can also benefit by a focused use of survey techniques to define contaminant plumes in three dimensions.

Section 4.5.2 Background Surface Soil Sampling Approach (Shipyard), and
Section 4.5.2.2 Background Surface Soil Samples (Station)

There is no discussion of the review process for the data from the proposed presumed background locations. As for the RI/Fs Workplan comment above, the existing data needs to be reviewed prior to deciding whether more samples for background are needed. Further, should additional locations be deemed necessary, the data must be reviewed prior calculating a range of background values. The criteria for excluding (perhaps more importantly, including) various samples as background should be a topic for agreement by the technical committee before the results of calculations are published as drafts.

I recommend that this section be changed to reflect full consideration of existing data prior to designing further sampling; that rationale be provided for additional sampling, and that the technical committee be involved in setting criteria for excluding and including data used for background.

Section 6.3 Well Installation and Completion

Though the SAP recognizes the need to use a cement in the grout that provides good service in brackish conditions, the cement type is not specified.

I recommend that the SAP explicitly list the cement type so that the technical committee can judge the appropriateness of the type and the geologist responsible for executing the SAP orders the proper type, the drillers are told explicitly and the load is checked for the specified cement type.

Section 6.3.2 Well Development

The SAP states that well development will not proceed beyond removal of 10 well volumes. The SAP does not say how that volume was selected, nor what the implications are of a well not meeting the development criteria. The SAP does state performance criteria for completion of development, but the volume restriction supercedes other criteria. Usually, when a well cannot meet standard performance criteria (e.g., steady pH, EC, turbidity) the implication is poor well design, construction, or both.

I recommend that the restriction on well volumes be deleted, or the rationale for the restriction be explicit and reviewed by the technical committee.

Section 6.3.3 Aquifer Testing

The SAP states that the expected length of time for pumping during an aquifer test is four hours. Often, an aquifer test lasting less than 24 hours does not provide data regarding recharge or barrier conditions. The information desired from the aquifer tests is implied parenthetically (transmissivity, hydraulic conductivity, and specific yield). If recharge and barrier conditions are not needed for this investigation, then perhaps four hours is adequate, but the rationale for the selection of four hours (rather than two or eight hours) is not provided. Slug tests are discussed as possible alternatives to pumping tests in wells where water production is inadequate for pumping tests. Experience has shown that slug tests, if performed in wells of similar construction and using the same technique at each well, can provide good relative data regarding the distribution of hydraulic properties. Slug tests performed in wells that also have pumping tests will provide some degree of calibration. Indeed, the number of pumping test(s) may be reduced based on initial pumping test and slug test data, with an emphasis on a few good pumping tests lasting longer than four hours and using slug tests as correlative tools. Such a technique may save disposing of large quantities of pumped water and save time overall.

I recommend that the technical rationale for selection of aquifer pumping tests lasting four hours be provided. Also, the SAP should explicitly state what information normally acquired during full pumping tests is not necessary to acquire at this site. The accuracy of such tests should be discussed in light of the needed degree of accuracy for risk assessment. Consideration should be given to perform a few full-length pumping tests with slug tests as correlative tools.

Mention is made of using transducers and data loggers, but no mention is made of the frequency of " picking " water levels.

I recommend that the SAP state the data pick frequency, with the normal method of acquiring early data at very short frequency, falling off at a geometric rate.

Section 6.5 Water Level Measurements

There is a typographical error stating that ground water levels will be measured to the nearest 0.01 inch, rather than 0.01 feet.

Section 6.6.1 Groundwater, Item 4

The unit designation of 1 per mil for salinity measurement may be confusing to the lay reader.

I recommend that the unit designation be 1 part per thousand (ppt) or 1 gram per liter (g/l), as appropriate.

The criterion of purging by pumping three times to dryness in slowly producing wells is not supported by rationale (the norm is once), and appears to be in conflict minimizing fluid production (restricting the volumes removed during development and abbreviated pumping tests).

I recommend that the SAP provide explicit rationale for purging three times to dryness, rather than once.

Well Point Groundwater Sampling

Following the initial paragraph are guidelines for sampling. Are these guidelines applicable to all ground water sampling and not just wellpoint ground water sampling ? They seem to apply to all ground water sampling.

I recommend that the guidelines, if applicable to all ground water sampling, be separated by section that explicitly states that they apply to all ground water sampling.

Section 6.6.5 Subsurface Soil, 2nd paragraph

Reference to the " blocking plug " is ambiguous. Does this imply that a plug or blank center bit will be used rather than a center bit with fishtail teeth ?

I recommend that " blocking plug" be changed to read " center bit " or " center fishtail bit ".

Section 6.7.2 Groundwater and Soil Sampling Equipment

The decontamination procedure, the third bulleted item parenthetical remark (when semivolatile and nonvolatile organic contamination may be present) implies knowledge of the conditions at the site. The sites where rinsing with subgrade methanol may not be necessary are as known now as they will be when the samplers are there. Why not specify which sites the rinse is or is not required ?

I recommend that the SAP state explicitly which sites are suspected of having semivolatile or nonvolatile organics contamination for the purpose of sample equipment decontamination and therefore at which sites a methanol rinse is required. The samplers should be instructed at which locations a methanol rinse is required and which locations they must merely be prepared to perform the methanol rinse if situations warrant.

Section 6.9.2 Packaging and Shipping

There is no discussion of the method to verify that coolers reached and maintained a maximum temperature of 4°C.

I recommend that the SAP include the method to verify that ambient temperatures in the shipping coolers was lowered to a maintained 4°C.

There is no discussion of the criteria or procedures for resampling should samples be lost, tampered with, or broken due to mis-handling or freezing.

I recommend that the SAP include criteria for when the loss of a sample would cause a need for resampling (i.e., are there any samples by themselves that are critical to the Phase 1 investigation ?).

Section 6.12.4 Trip Blanks

The sentence, " Samples collected...TCL volatiles. " contains the awkward phrase, " separately together ".

I recommend that the sentence be re-written.

Section 6.12.6 Harbor Sediment Reference Samples, (Naval Station SAP only)

The first sentence is ambiguous. The phrase, " surface deep " is awkward.

I recommend that the sentence be re-written.

If you have any questions or comments, please call me at (916) 255-2104 or Calnet at 8-494-2104.

Allen R. Winans
C.E.G. No. 1402
Associate Engineering Geologist

Brian Lewis

Concur: Brian Lewis
C.E.G. No. 1414
Senior Engineering Geologist
Permitting and Enforcement
Geological Support Unit

State of California

Department of Toxic Substances Control

Memorandum

ATTACHMENT C

To: Craig O'Rourke
Facilities Permitting Branch
Region 4
245 W. Broadway, Suite 350
Long Beach, California 90802-4444

Date: 25 June 1993

From: Office of Scientific Affairs (OSA)
400 P Street, 4th Floor
P. O. Box 806
Sacramento, CA 95612-0806
Voice: (916) 255-2038 Fax: (916) 255-2096 (ATSS 8-494-2038,2096)

Subject: Long Beach Naval Complex
PCA Code 14615 Site Code 400289-43

Background

Long Beach Naval Complex (LBNC) is in Los Angeles County, in the immediate vicinity of the ports of Los Angeles and Long Beach. The complex is composed of Long Beach Naval Station (LBNS), a military base, and Long Beach Naval Shipyard (LBNSY), a drydock facility capable of servicing very large vessels. LBNS is slated for closure in the 1990's. Currently, the Navy is conducting a RCRA Facility Investigation (RFI) which includes the entire complex. Region 4 has asked OSA to provide ongoing support in areas of toxicology and risk assessment related to the RFI.

Document Reviewed

The work plans and sampling plans for the Phase I RI/FS for LBNC were received in four volumes. Comments in this memorandum are confined to risk assessment procedures and to the assessment of harbor sediments, all of which were described in the first volume. This was entitled "Naval Station Long Beach, Long Beach, California, Installation Restoration Program, Draft Remedial Investigation/ Feasibility Study (RI/FS), Work Plan". The volume was prepared by CH2M/Hill and is dated 30 April 1993.

General Comments

1. We rely on Regional staff to judge site characterizations with respect to adequacy of sampling, data quality, and adherence to overall program objectives. The comments of OSA focus on the utility of the information in the subject report for the purpose of assessment of risks to human and environmental health.

environmental health.

2. The document was reviewed for scientific content. Minor grammatical or typographical errors that do not affect the interpretation have not been noted. However, these should be corrected in the final version of the document.

3. Future changes in the document should be clearly identified. This may be done in several ways: by submitting revised pages with the reason for the changes noted, by the use of strikeout and underline, by the use of shading and italics, or by cover letter stating how each of the comments hereunder has been addressed.

Specific Comments - Reference 1 - LBNC - RI/FS Work Plan:

1. **Remedial Action Objectives, Section 2.2, p 2-3 ff.:** The language quoted from the National Contingency Plan is entirely valid for the purposes of protecting human health. However, LBNC might very well have contaminated sediments in the harbor. Risk assessment for these sediments will probably focus on non-human receptors. OSA advises the Navy to make some clear statement in the final work plan about its remedial action objectives for protection of non-human receptors.

2. **Preliminary Risk Evaluation, Section 2.3.1, p. 2-5 ff.:** OSA finds that the concentrations of chemicals in soil published by USEPA Region IX as draft Preliminary Remediation Goals (PRGs) are not appropriate to use as screening criteria, because important pathways are not considered. See comments below for Appendix B.

3. **Sites 1 through 4:** During meetings between DTSC and the Navy, considerable mention was made of underwater surveys of the physical condition of the Mole. However, no reference is made to such surveys. Will they be used or made available? If the Mole has deteriorated near Site 3, the sea could be in direct contact with old waste pits.

4. **Appendix A, California ARARS:** We note that California ARARs are not summarized in this appendix. OSA strongly recommends the use of the cancer potency factors published by the Standards and Criteria Work Group of Cal/EPA. If the Department can assist the Navy in any way in preparing a list of ARARs appropriate for California sites, please contact either Region 4 or OSA.

Regarding Table A-2, we could not locate an explanation of the significance of placing some values in parentheses. Are these proposed values? Also, page 6 of this table is mislabeled as "Table 2-1".

5. **Appendix B, Screening Risk Assessment Methodology:** The Navy proposes to make decisions on whether sites require further investigation by comparison to draft PRGs published by USEPA Region IX. The Navy has used the draft PRGs for chemicals in soil published by USEPA Region IX in a memorandum written by Dr. Stanford Smucker and dated 2 April 1993. USEPA guidance ("Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B, Preliminary Risk-Based Remediation Goals (PRGs)" [RAGS Part B], USEPA, October 1991) recommends that PRGs account for all significant pathways of exposure. However, dermal absorption was not included as a pathway in the PRGs proposed by the Navy. Inclusion of the dermal pathway would lower the PRGs by a factor of 2 to 10. OSA feels that the screening procedure proposed by the Navy could lead to premature exclusion of sites from further investigation.

   The Navy proposed a more acceptable method for preliminary screening of sites in a submission to the Department regarding Marine Corps Air Station El Toro. This method was developed by the same Navy contractor, CH2M/Hill, who produced the current document for LBNC. The method proposed for the El Toro installation resulted in risk-based screening criteria for carcinogenic and non-carcinogenic effects of chemicals in soil in a residential setting. The method included exposures to both adults and children and included pathways of ingestion, dermal contact, and inhalation of vapors and/or dust. This proposed method, as modified in response to comments from OSA, is recommended for use at LBNC.

6. **Appendix D, Sediment Toxicity Evaluation, p. D-3:** We expect that the Navy will locate the primary reference from JRB Associates for their EP criteria for metals.

7. **Table D-1, p. D-3:** How close to the limit of detection is 0.0075 mg/kg, the value for mercury based on equilibrium partitioning? This value might not be useful. OSA notes that for chemicals with values based on both equilibrium partitioning and the effects range low (ER-L), the value based on equilibrium partitioning tends to be two to three orders of magnitude higher. Because these values are to be used in a screening procedure, OSA feels that the values based on equilibrium partitioning might not be adequately protective of environmental health. Therefore, OSA recommends that the USEPA's method

of comparative toxicity be used to develop a screening value for all chemicals which have no ER-L. The comparison criterion would then be the lower of the values developed using equilibrium partitioning and comparative toxicity.

8. **Eliminate Certain Metals as Being of Concern, p. D-8 ff.:** OSA concurs that concentrations detected to date for Al, Ba, Be, Fe, and V indicate that these metals are not of concern. The third bullet on p. D-12 should be made to conform with the text on p. D-8.

9. **Organotins, p. D-8:** OSA concurs that screening for tributyltin will suffice for the class of organotins. However, we are not prepared to ignore the toxicity of the mono- and dibutyltins

10. **Acid-Volatile Sulfide (AVS), p. D-11:** OSA recognizes that controversy exists regarding the interpretation of data from analyses of AVS. Nevertheless, we suggest that the Navy state how and when these data will be used. For instance, if bioassay of a sediment sample from 10 cm deep yields 100% lethality, can data on AVS be used to determine the appropriateness of the sample?

11. **Detection Limits. p. D-11 ff.:** Because instrument detection limits do not account for matrix interference and CLP detection limits are only generally applicable, OSA suggests that the figure of merit is the <u>sample quantitation limit (SQL)</u>, which is analogous to the instrument detection limit for each sample (see RAGS Part A, Chapter 5). OSA does not believe that a single set of detection limits should be used to describe sediment or any other medium.

12. **"Unexpected Factors", p. D-14:** This is unacceptably vague. If this refers to factors such as those described in the first paragraph on p. D-20, we suggest that the Navy call these "factors not related to site activities". Regional contamination with low levels of DDT and congeners might fall into this category. In fact, OSA recommends that the Navy state in the work plan how they intend to interpret the certain finding of low levels of chlorinated pesticides in harbor sediments against the known regional background.

13. **Locations of Background Sediment Samples, p. D-18:** OSA feels that the proposed approach to locating appropriate background sediment is sound. The Navy will be required to gain the concurrence of the Department and the Regional Water Quality Control Board on these locations before actual sampling.

14. **Bioassays, p. D-19:** The second reference to a polychaete is apparently an

error. *Holmesimysis costata* is a mysid shrimp which was recommended by Dr. Polisini of OSA as a test species; the species shown is apparently a misspelling. The other species and assays seem to be appropriate for bioassay of sediment. OSA will wish to review the protocols for these tests before commencement of testing.

15. **Decision Tree, Figure D-1 and pp. D-19 to D-21:** The Navy describes what actions would be recommended upon several different combinations of findings of chemical analysis and bioassay, all in accordance with Figure D-1. We found these examples rather confusing. We suggest presentation in a tabular summary, showing the results of the different assays and the actions taken for the four examples described in the text.

16. **Appendix G, Data Qualifiers:** OSA recognizes the value of the qualifiers for purposes of data validation under USEPA's Contract Laboratory Program (CLP), as shown in this appendix. These same qualifiers are summarized in Exhibit 5-4 in RAGS Part A. However, only three of these qualifiers - B, J, and U - are of value to the risk assessor, as in Exhibit 5-5 from RAGS Part A. Inclusion of the longer list of qualifiers in the RI/FS report will make tables of data cluttered and difficult to use. Several of the qualifiers shown in Appendix G render data useful only for qualitative purposes. Inclusion of such values in data tables will make it especially difficult to decide which values to use in the risk assessment.

    We recommend that the Navy instruct its contractor(s) to include in the main analytical data base as many qualifiers as are required for data validation. OSA strongly urges that tables of data in the RI/FS report show no more qualifiers than B, J, and U, as defined in RAGS Part A, Exhibit 5-5. If data are not usable in a risk assessment (e.g. qualitative value only), these can remain in the data base, but should not be included in tables of data in the RI/FS. A separate report or appendix dealing just with data validation might be an appropriate vehicle for presenting the qualifiers shown in the current Appendix G.

17. **Appendix H, Sediment Transport Processes:** The authors switch repeatedly between English and metric units for velocity. This is confusing. Please use just one set of units.

18. **Incremental Approach, pp. H-6 and H-7:** An "incremental approach" is stated to have been selected over the hydrodynamic modeling approach because of the "stepwise nature of addressing the problem". This is circular. Please state <u>why</u> one approach is better than the other for this site.

19. **Natural Recovery, p. H-10:** Historical information on the effectiveness of natural recovery is needed to select this remedial method over other candidate strategies. It would seem that natural recovery could only be applied to areas of toxic sediment defined by bioassays if the substance(s) responsible for the toxicity is identified. However, such cause-effect relationships usually cannot be established. The Work Plan should reflect the difficulty (or the impossibility) of applying natural recovery to areas of contamination defined by bioassays.

20. **Sampling:** How is the analysis of sediment transport used to identify likely zones of deposition in the harbor or elsewhere? This analysis should be used to select sites for sampling which are most likely to have been contaminated by transported sediment.

Conclusion

The methodology for screening risk assessment for the terrestrial sites at the Complex should not use the draft PRGs of USEPA Region IX as screening criteria. Appropriate screening criteria should into account the major routes of exposure, including dermal contact with soil and inhalation of airborne dust. The presentation on the characterization of harbor sediments is generally good and requires only a few modifications, as noted. OSA will wish to view test protocols before commencement of bioassays.

If we can be of any further assistance, please call us.

John P. Christopher, Ph.D., D.A.B.T.
Staff Toxicologist
Human and Ecological Risk Section (HERS)

Reviewed by: James Polisini, Ph.D. MJW for J.P.
Staff Toxicologist, HERS

cc: Dr. J. Parker, HERS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
11 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

ATTACHMENT D

June 29, 1993

Craig O'Rourke
Department of Toxic Substance Control, Region 4
245 West Broadway Avenue, Suite 350
Long Beach, California 90802

RE: NAVAL STATION LONG BEACH, INSTALLATION RESTORATION PROGRAM, REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS), DRAFT SAMPLING AND ANALYSIS PLAN

The sampling stations indicated in the study and the proposed approach to sampling appear to be comprehensive. However, there were several points that require clarification. These are as follows:

1] Table 4-6 - The detection limits for metals do not mention whether these limits are for sediment or water samples.

2] Whole Sediment Bioassay (WSB) - Three species are mentioned for WSB's. We suggest eliminating the mysid WSB and substituting a bioassay using sediment pore water in order to evaluate contamination of the interstitial water of the sediment. Since many contaminants are found in the interstitial water, the pore water test may be more relevant ecologically. A recommended species for this test is the abalone.

3] Bioaccumulation - We are unclear as to which species would be used for bioaccumulation studies. The Bedded Sediment Bioaccumulation Test mentioned does not indicate which protocol would be used.

4] Tissue Sampling for Bioaccumulation - The approach to the tissue sampling is unclear. We recommend consistent use of the same species from each sampling station, if possible.

5] Section 6.7 - Procedures for disposal of chemicals used for decontamination of sampling equipment are reported to be in section 6.7. However, there is no mention of these procedures in this section. These wastes must be disposed of in an acceptable manner.

Should you have any questions concerning this letter, please call Shirley Birosik at (213) 266-7617 or Morag Logan at (213) 266-7646.

J. MICHAEL LYONS
Chief, Surveillance Unit

430 (03-18

State of California

Memorandum

ATTACHMENT E

To : Mr. Craig O'Rourke
Department of Toxic Substances Control
Facility Permitting Branch
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444

Date: June 27, 1993

File : 90-76

From : **CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—LOS ANGELES REGION**
101 Centre Plaza Drive, Monterey Park, CA 91754-2156
Telephone: (213) 266-7500

Subject : **NAVAL STATION LONG BEACH-LONG BEACH, CALIFORNIA-INSTALLATION/ RESTORATION PROGRAM SITE 6B DRAFT PRELIMINARY ASSESSMENT REPORT (File No. 90-76)**

We have received and reviewed the draft preliminary assessment report for the Naval Station Long Beach Site 6B, dated April 30, 1993. We agree that groundwater contamination at the site is likely and that further soil and groundwater investigation is warranted. Further comments based on the contents of the draft preliminary assessment are as follows:

- A minimum of three wells should be installed to determine the groundwater flow direction. A groundwater contour map should also be included in the report. Groundwater data should also include TDS levels.

- Potential soil and groundwater contaminantion from both the underground storage tank (UST) area and the Old DPDO Scrapyard need to be investigated and identified.

- Soil and groundwater contaminantion plumes, if any, should be identified and defined in three dimensions using technology such as CPT and Hydropunch or any other method suitable for such investigation activity.

- A site plan showing abandoned and existing oil and gas wells in the general vicinity should be included on a site map. These are of interest as they may provide hydraulic continuity between the shallow and deeper aquifers.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7650.

J.E. ROSS, Unit Chief
Site Cleanup Unit

State of California

Memorandum

To : Mr. Craig O'Rourke
Department of Toxic Substances Control
Facility Permitting Branch
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444

Date: June 29, 1993

File : 90-75, 90-76

From : CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—LOS ANGELES REGION
101 Centre Plaza Drive, Monterey Park, CA 91754-2156
Telephone: (213) 266-7500

Subject : **NAVAL STATION AND NAVAL SHIPYARD LONG BEACH- LONG BEACH, CALIFORNIA INSTALLATION RESTORATION PROGRAM REMEDIAL INVESTIGATION FEASIBILITY STUDY (RI/FS) DRAFT SAMPLING AND ANALYSIS PLAN (File No. 90-75,90-76)**

We have received and reviewed the draft Sampling and Analysis Plan for the Naval Station, Long Beach, dated April 30, 1993. Two staff members also attended a Technical Review Committee (TRC) meeting held at the Naval Station in Long Beach on May 25 and June 17, 1993. Our comments, based on the above mentioned reports and meetings, are as follows:

- Screening Risk Analysis
  1) The screening risk assessment methodology used to characterize groundwater conditions at the sites referenced in the report are not considered appropriate for establishing cleanup standards. State requirements, identified for the Long Beach Shipyard by us, should be used for the above. A list of Los Angeles Regional Water Quality Control Board requirements for the referenced facilities was provided to DTSC Long Beach on April 6, 1993. Site specific and chemical specific cleanup criteria will be developed after the proposed round of sampling has been completed.
  2) The screening risk assessment methodology does not take into account the oil and gas wells present in and around the Naval Station and Shipyard. Some of these wells are directly downgradient of contaminated sites. The possibility that these wells could serve as a pathway to underlying aquifers should be discussed. A map showing the abandoned and producing wells on and in the immediate vicinity of the Naval Station and Shipyard should be included in the plan.

- Site 3: INDUSTRIAL WASTE DISPOSAL PITS
  1) The eastern and western boundaries of the site have not been located.
  2) Surface soil samples should also be taken outside the site limits to define the location of the disposal pits.

- Site 4: MOLE EXTENSION OPERATIONS
  1) Proposed sampling points and monitoring wells are all centrally located in the areas of known contamination (excepting two shallow well points in Alternate Site 1). Sampling points and wells should also be located outside these previously investigated areas in order to define the horizontal and vertical limits of soil and groundwater contamination.
  2) Monitoring wells and soil borings should be proposed in the northern portion of the jogging trail on the mole and in the area directly east of the fill area (south of Pier 9).

- SITE 6A: BOAT DISPOSAL LOCATION
  1) The draft Sampling and Analysis Plan calls for determining the vertical extent of soil and groundwater contamination. The plan should also include a proposal to determine the horizontal limits of both soil and groundwater contamination.

- Site 8: Building 210 Trichloroethene Disposal Site
  1) Groundwater sampling of MW-24 is proposed. However MW-24 is upgradient of the site.
  2) Given the site history, groundwater samples taken along the fenceline would be more appropriate.
  3) A well should be installed in the parking lot downgradient of the disposal site.
  4) An oil well exists immediately downgradient of the disposal site. This potential pathway to underlying aquifers should be addressed.

- Site 11: Hillside East of Drydock 1
  1) Three shallow wells are proposed in this area. The surface relief is 20 feet. Groundwater is estimated to be 10 feet below ground surface at the toe of the slope and 20 feet below ground surface at the top. This implies that the direction of groundwater flow is towards the Drydock. However, flow direction is reported to be towards the northeast. We will require that the correct groundwater flow direction in the area be determined.
  2) Upon determination of the direction of groundwater flow, monitoring wells should be located downgradient of the site. If groundwater flow direction is to the north-northeast as stated monitoring wells/sampling will be required

downgradient of the northern portion of the site.
3) If contamination is discovered additional wells/ sampling may be required to adequately characterize the site.
4) An oil well exists at the top of the slope. The potential pathway provided to underlying aquifers should be discussed.

- Site 13: Paved Tank Farm Area
1) Soil and groundwater contamination is known to be present at this site. Groundwater direction is unclear.
2) Additional wells should be installed to determine the groundwater flow and to characterize the existing plume.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7650.

J.E. ROSS, Unit Chief
Site Cleanup Unit

State of California Department of Toxic Substances Control

Memorandum

ATTACHMENT F

To : Craig O'Rourke
Hazardous Materials Specialist
Facility Permitting Branch

Date: July 9, 1993

From : Site Mitigation Branch
245 W. Broadway Avenue, Suite 350
Long Beach, California 90802

Subject: Review of the Naval Station Long Beach Installation Restoration Program Remedial Investigation Feasibility Study (RI/FS) Draft Sampling and Analysis Plan

Introduction

As you requested, we have reviewed the first draft of the Naval Station Long Beach Installation Restoration Program Remedial Investigation Feasibility Study (RI/FS) Draft Sampling and Analysis Plan. The Sampling and Analysis Plan, dated April 30, 1993, was prepared by CH2M HILL, Inc. and Jacobs Engineering Group Inc. on behalf of the Long Beach Naval Station. The plan discusses future Sampling Plan work as part of the RI/FS process for Sites 1 - 7.

General Comments

The Remedial Investigation/Feasibility Study (RI/FS) Draft Sampling and Analysis Plan provides adequate discussion of most of the remedial investigation objectives. However, the plan is not well-organized, Tables of Contents are inaccurate, and contains missing sections. In addition, the plan contains grammatical errors and inaccurate references.

Specific Comments

1. **Table of Contents** Submit revised Table of Contents to reflect the exact pages in the plan.

2. **Page 1-1, Section 1.0, Paragraph 3, line 3** Specify the section of the Workplan where the conceptual model is in the RI/FS Work Plan.

3. **Page 3-15, Paragraph 2, line 4 to line 7** Correct grammatical errors in the paragraph.

4. **Page 4-1, Paragraph 1, Line 5** Specify the section of the RI/FS Workplan where the conceptual model is applicable.

5. **Page 4-1, Paragraph 2, Line 1** Correct the grammatical error "to occur to attain".

6. **Page 4-24, Paragraph 1, Line 6** List EM on the acronym list of the plan or spell it out.

7. **Page 4-25, Section 4.4.4, Bullet 4** List ROICC in the acronym list of the plan.

8. **Page 4-27, Paragraph 1, Line 8** Submit Section 6.5.8 which is missing or omitted.

9. **Page 4-39, Paragraph 2, Line 5** List NOAA in the acronym list of the plan.

10. **Page 4-40, Paragraph 1, Line 4 - Line 10** Correct grammatical errors in the paragraph.

11. **Page 4-44, Paragraph 3, Line 4** Correct grammatical error on sentence "Groundwater, soil, and sediment.... Target Analyte List (TAL) for metals.

12. **Page 4-61, Bullet 2** Submit information about assessing the groundwater parameters.

13. **Page 4-94, Paragraph 1, Line 1** Correct grammatical error on the second sentence of the paragraph.

14. **Page 4-108, Paragraph 2, Line 1** Correct the first sentence of the paragraph, does not make sense.

15. **Page 4-108, Paragraph 2, Line 6** Correct grammatical error in the sentence "The groundwater samples collected at the well points will be <u>analyses</u> for TCL volatile organics."

16. **Page 4-109, Paragraph 1, Line 1** Refer to the correct section because Section 4.5.1.2 does not contain that information.

17. **Page 4-121, Paragraph 1, Line 4** Provide reference to a figure wells MW-1,MW-3, and MW-7.

18. **Page 4-122, Paragraph 1, Line 5** Correct grammatical error "one the wells".

19. **Page 4-124, Paragraph 3, Line 3** Correct grammatical error "will be analyses for TCL".

20. **Page 4-139, Paragraph 1, Line 4** Correct grammatical error "Because it not certain".

21. **Page 141, Table 4-17, Row - Surface Soil, Column - Proposed Activities** List SVOCs in the acronym list of the plan.

22. **Page 4-149, Bottom Paragraph, Line 5** Provide the correct word instead of "proper".

23. **Page 4-151, Paragraph 1, Line 3** Specify the section of the RI/FS Workplan where the conceptual model is applicable.

24. **Page 4-151, Paragraph 1, Line 7** Line 7 refers to the incorrect section which is "Section 4.5.2". Provide the correct one.

25. **Page 4-164, Paragraph 2, Line 5** Provide missing Section 6.11.7 which line 5 refers to.

26. **Page 4-166, Paragraph 1, Line 2** Provide missing Section 6.11.7 which line 2 refers to.

27. **Page 6-2, Bullet 1** List ROICC in the acronym list of the plan.

28. **Page 6-23, Paragraph 2, Line 12** Provide missing Section 6.5.2 which line 12 refers to.

29. **Page 6-41, Bullet 1** List TSP in the acronyms list of the plan.

30. **Page 6-41, Bullet 5** Define and list HPLC in the acronyms list.

31. **Page 6-68, Paragraph 1, Line 3** List Ms/MSD in the acronyms list of the plan. Furthermore, correct the notation used for Ms/MSD on this line and following paragraphs.

Appendix A

Quality Assurance Project Plan

32. **Table of Contents** Submit a revised Table of Contents for Quality Assurance Project Plan.

33. **Page A-28, Paragraph 1, Line 6** Correct grammatical error "sampling event sample number".

34. **Page A-69, Last Paragraph, Line 2** State type of method "Section 3 of Method 407 B".

35. **Page A-84, Section 1.7.6, Number 1, Line 3** State type of method "Section 3 of Method 403".

36. **Page A-85, Paragraph 3, Line 2** State type of method "Section 5 of Method 403".

37. **Page A-91, Section 1.9.3, Number 3, Line 1** Provide list of recommended acids for pretreatment. Attachment 3 does not list them.

38. **Sections 1.10, 1.11, 1.13, 1.14, 1.15** Incorporate all these sections into one because they contain the same information.

39. **Page A-101, Paragraph 1, Line 1** Correct grammatical errors in "for intructions for instruments".

40. **Page A-102, Title of Section 1.18** List SAS in the acronyms list on Page v for the Quality Assurance Project Plan.

41. **Page A-102, Paragraph 1, Line 1** List RAS and SOW in the acronyms list on Page v for the Quality Assurance Project Plan.

42. **Page A-102, Section 1.18, Number 1, Line 3** Correct grammatical errors "in the RAS SOW". Furthermore, this error should be corrected in all Section 1.18.

Alvaro Guiterrez

Alvaro Guiterrez
Waste Management Engineer

cc: See next page.
Albert A. Arellano, Jr., P.E., Chief
Region 4 Base Closure Unit
Base Closure Branch

Anand R. Rege
Unit Chief
Facility Permitting Branch

State of California Department of Toxic Substances Control

Memorandum

: Craig O'Rourke
Hazardous Materials Specialist
Facility Permitting Branch

Date: July 9, 1993

From : Site Mitigation Branch
245 W. Broadway Avenue, Suite 350
Long Beach, California 90802

Subject: Review of the Naval Shipyard Long Beach Installation Restoration Program Remedial Investigation Feasibility Study (RI/FS) Draft Sampling and Analysis Plan

INTRODUCTION

As you requested, we have reviewed the first draft of the Naval Shipyard Long Beach Installation Restoration Program Remedial Investigation Feasibility Study (RI/FS) Draft Sampling and Analysis Plan. The Sampling and Analysis Plan, dated April 30, 1993, as prepared by CH2M HILL, Inc. and Jacobs Engineering Group Inc. on behalf of the Long Beach Naval Shipyard. The report discuss future Sampling Plan work as part of the RI/FS process for Sites 8 - 13.

GENERAL COMMENTS

The Remedial Investigation/Feasibility Study (RI/FS) Draft Sampling and Analysis Plan provides adequate discussion of most of the remedial investigation objectives. However, the plan is not well-organized, because of duplicated pages and missing sections. In addition, the plan contains grammatical errors and inaccurate references.

SPECIFIC COMMENTS

1. **Table of Contents** Submit revised Table of Contents to reflect the exact pages in the plan.

2. **Page 3-15, Section 3.5, Paragraph 2, line 4 to line 7** Correct grammatical error. "Also, groundwater flow conditions in the shallow zone are likely to have changed considerably since that time since the pumping operations at the SCE facility have recently been increased and pumping that could influence the shallow zone groundwater has recently begun at Drydock 1".

3. **Page 4-1, Paragraph 1, Line 5** Specify the section of the Workplan where the conceptual model is applicable.

4. **Page 4-1, Paragraph 2, Line 1** Correct the grammatical error "to occur to attain".

5. **Page 4-22, Section 4.4.4, Bullet 4** List ROICC in the acronym list of the plan.

6. **Page 4-23, Paragraph 1, Line 8** List CIA in the acronym list of the plan.

7. **Page 4-23, Paragraph 2, Line 4** Revise plan to show that Soil Gas Investigation is specify in Section 4.8.6. Reference to Section 4 too general.

8. **Table 4-17, Row - Drum Crushing Area, Column - Proposed Activities** List SVOCs in the acronym list of the plan.

9. **Page 6-5, Paragraph 1, Line 6** Provide missing Section 6.5.6. which line 6 refers to.

10. **Page 6-18, Paragraph 2, Line 6** Change Section 6.5.1 to Section 6.6.1.

11. **Page 6-19, Paragraph 1, Line 13** Change Section 6.7.1 to Section 6.8.1.

12. **Page 6-23, Paragraph 2, Line 12** Provide missing Section 6.5.2.

13. **Page 6-27, Paragraph 3, Line 6** Change Section 6.9 to Section 6.10.

14. **Page 6-28, Paragraph 2, Line 3** Change Section 6.8.1 to Section 6.9.1.

15. **Page 6-36, Bullet 1** List TSP in the acronyms list of the plan.

16. **Page 6-36, Bullet 5** Define and list HPLC in the acronyms list.

17. **Page 6-37, Paragraph 2, Line 7** Correct grammatical errors "will decontaminated".

18. **Page 6-61, Paragraph 2, Line 3** List Ms/MSD in the acronyms list of the report. Furthermore, correct the notation used for Ms/MSD on this line and following paragraph.

Appendix A

Quality Assurance Project Plan

19. **Page A-28, Paragraph 2, Line 6** Correct grammatical error "sampling event sample number".

20. **Page A-43, Equation for Recovery and Percent Recovery** Provide references and sources for this equations.

21. **Page A-69, Last Paragraph, Line 2** State type of method "Section 3 of Method 407 B".

22. **Page A-84, Paragraph 4, Line 3** State type of method "Section 3 of Method 403".

23. **Page A-85, Paragraph 3, Line 2** State type of method "Section 5 of Method 403".

24. **Page A-91, Paragraph 3, Line 1** Provide list of recommended acids for pretreatment.

25. **Page A-101, Title of Section 1.13** List SAS in the acronyms list on Page v for the Quality Assurance Project Plan.

26. **Page A-101, Paragraph 3, Line 1** List SOW in the acronyms list on Page v for the Quality Assurance Project Plan.

27. **Page A-101, Paragraph 3, Line 1** List RAS in the acronyms list on Page v for the Quality Assurance Project Plan.

28. **Page A-101, Paragraph 4, Line 3** Correct grammatical errors "in the RAS SOW". Furthermore, this error should be corrected on Page A-102.

Alvaro Guiterrez
Alvaro Guiterrez
Waste Management Engineer

cc: Albert A. Arellano, Jr., P.E., Chief
Region 4 Base Closure Unit
Base Closure Branch

ATTACHMENT G

SITE HEALTH AND SAFETY PLAN REVIEW

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LONG BEACH NAVAL SHIPYARD, SITES 8 THRU 13
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

PCA# 14650

CONTRACTOR

JACOBS ENGINEERING GROUP, INC.

DTSC PROJECT MANAGER

CRAIG O'ROURKE, HMS

REVIEWED BY

JERRY D. EARLEY, AIH

PEER REVIEW BY

MARK PHEATT, CIH
IHSS-OSA

INTRODUCTION

This site specific Health and Safety Plan (HASP) has been developed for the site remedial investigation and feasibility activities at the Long Beach Naval Shipyard (LBNSY), sites 8 - 13, located at the Long Beach Naval Complex, Long Beach, California.

LBNSY was commissioned in 1943 as a part of the Terminal Island U.S. Naval operations. LBNSY employed 16,000 civilians during World War II. LBNSY provides logistical support for assigned ships; performs authorized work in connection with construction conversion, overhaul repair, alteration, drydocking, and fitting out of ships; and performs manufacturing research, development, and test work.

Within the complex, the LBNSY is the largest generator of hazardous waste. The majority of the waste is generated by three departments: Public Works; Production; and Supply. The waste streams consist of mainly solvents, oils, metal plating and cleaning solutions, paints, and sandblast material.

There are six sites to be investigated and characterized at this location. They are as follows:

8. building 210 TCE disposal site;
9. building 129 ground floor spills;
10. lot H past operations;
11. hillside east of drydock 1;
12. parking lot X toxic sandblast disposal; and,
13. tank farm near building 303.

The Department has reviewed the HASP for compliance with Title 8, California Code of Regulations (8 CCR), Section 5192:" Health and Safety for Hazardous Waste Operations and Emergency Response" as well as other appropriate State and Federal occupational health and safety regulations. [Please note that in addition to the requirements of this section,the employer is responsible for the implementation of an effective Accident, Illness and Injury Prevention program which is required by the California Code of regulations, sections 1509 and 3203. The requirements of those sections have not been included in this review.]

The Department has identified these areas for clarification. They are referenced by section and page of the original document. (see attached)

An Industrial Hygienist from the Office of Scientific Affairs may perform a field audit in order to confirm the implementation of the provisions and specifications presented in the HASP.

The Department is unable to foresee all the health and safety hazards in the workplace by the review of the submitted plan. In the safety plan submitted we noted safety violation which if

uncorrected may cause serious injury or illness of your employees as well as result in citations issued by the California Occupational Safety and Health Administration (Cal OSHA) which may exact monetary penalties. Continuous surveillance of the worksite and creation on an effective program by the employer will reduce work place injuries and reduce liability.

The review of this health and safety plan does not constitute nor imply approval of the plan by the Department.

cc: Site File

SITE HEALTH AND SAFETY PLAN REVIEW

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LONG BEACH NAVAL STATION, SITES 1 THRU 7
NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

PCA# 14650

CONTRACTOR

JACOBS ENGINEERING GROUP, INC.

DTSC PROJECT MANAGER

ALVARO GUTIERREZ, WME

REVIEWED BY

JERRY D. EARLEY, AIH

PEER REVIEW BY

MARK PHEATT, CIH
IHSS-OSA

INTRODUCTION

This site specific Health and Safety Plan (HASP) has been developed for the site remedial investigation and feasibility activities at the Long Beach Naval Station (NAVSTA), sites 1 - 7, located at the Long Beach Naval Station, Long Beach, California.

NAVSTA was established in 1946 as a part of the Terminal Island U.S. Naval operations. NAVSTA Long Beach includes the Mole, a breakwater constructed in 1944 that forms the western and southern boundaries of the West Basin of Long Beach Harbor. NAVSTA Long Beach provides coordination and support to ship units and other naval activities in the area.

There are six industrial waste sources located on the NAVSTA, laundry and dry cleaning, steam plant operations, air compressor operations, boat repair and cleaning, wet paper destruction, and paint bucket cleaning.

There are seven sites to be investigated and characterized at this location. They are as follows:

1. mole solid waste operations;
2. chemical material and waste storage area;
3. industrial waste disposal pits;
4. mole extension operations;
5. skeet range solid waste fill area

6A. boat disposal location

7. harbor sediments

The Department has reviewed the HASP for compliance with Title 8, California Code of Regulations (8 CCR), Section 5192:" Health and Safety for Hazardous Waste Operations and Emergency Response" as well as other appropriate State and Federal occupational health and safety regulations. [Please note that in addition to the requirements of this section,the employer is responsible for the implementation of an effective Accident, Illness and Injury Prevention program which is required by the California Code of regulations, sections 1509 and 3203. The requirements of those sections have not been included in this review.]

The Department has identified these areas for clarification. They are referenced by section and page of the original document. (see attached)

An Industrial Hygienist from the Office of Scientific Affairs may perform a field audit in order to confirm the implementation of the provisions and specifications presented in the HASP.

The Department is unable to foresee all the health and safety hazards in the workplace by the review of the submitted plan. In the safety plan submitted we noted safety violation which if uncorrected may cause serious injury or illness of your employees as well as result in citations issued by the California

Occupational Safety and Health Administration (Cal OSHA) which may exact monetary penalties. Continuous surveillance of the worksite and creation on an effective program by the employer will reduce work place injuries and reduce liability.

The review of this health and safety plan does not constitute nor imply approval of the plan by the Department.

cc: Site File

HEALTH AND . ETY PLAN REVIEW

Site Name: LONG BEACH NAVAL COMPLEX, SITES 1 THRU 13 Reviewed by: J. Earley, AIH

PCA: 14650 Site Code: 400289 Stage: 43

PG.	ITEM	DEFICIENCY	RECOMMENDATIONS
1	para 3	Plan states that it was written to satisfy the requirements of Title 8, sections 3203 and 1509.	Plan must be written in accordance with Title 8, section 5192. The elements are found in subsection (b)(4)(B) 1 - 10.
		The HASP should be site specific and organized so that the laborer can read and understand the risks and precautions. The plan appeared to be generic in nature and not well organized!	
		b4B1- A safety and health risk or hazard analysis for each site task and operation found in the workplan.	Each task and location should be itemized accompanied by a risk analysis. A tables format is useful.
	3.8 page 5	b4B3- PPE to be used for each of the site tasks.	cotton or Tyvek is not recommended for VOC's. Clarify the PPE regimen for each task and possible task.
		These are but a few comments. A complete plan review to be conducted when a detailed, site specific plan is submitted.	
17	3.1.1	Please indicate what reference is being used. The guidelines do not appear to comply with the ACGIH recommendations.	Follow the ACGIH recommendations or recommendations that are more stringent.

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18	3.2	Physical Hazards and Controls. 5192 (b)(4)(B)(1) A safety and health risk or hazard analysis for each site task and operation found in the workplan.	Recommend using a tables format to itemize the task and the accompanying risk. The HSP does not make it clear which task is associated with which risk.
	5.0	Full-face mask or chemical goggles in level C & B. As per 5192 g 5, PPE for each site task based upon risk must be specified.	It is not possible to get a good seal and wear goggles with a full-face respirator on. Please specify what types of Tyvek coveralls are to be worn for each risk.
	6.0	1. As per 5192 h, specific details as to when, where and types of monitoring would be conducted is required. 2. As per 5192 h 4, high risk employees need to be identified.	Provide information that correlates the type of monitoring with the activity. A table format would be helpful in expediting plan review.
37	6.1	Instruments to be calibrated prior to use. b4B5	A vague statement, is this each day, once a week? Provide a calibration schedule and include QA precautions (at end of shift).
		Safety shower/eyewash location does not conform with the 5162 (a) & (b) & (c).	The plan failed to meet the requirements for accessibility to emergency eyewash and shower facilities. Section (c) states that the eyewash and shower facilities shall be accessible and require no more that 10 seconds for the injured employee to reach. (a) & (b) states that they must comply with ANSI standard Z358.1. A statement to that effect would be required.