

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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N68311.000419
NAVSTA LONG BEACH
SSIC #5090.3



February 1, 1994

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

Captain John Jones
Commander Long Beach Naval Station
Long Beach Naval Station
Long Beach, California 90822-5000

Dear Captain Janov and Jones:

**DRAFT REMEDIAL SITE EVALUATION REPORT SITE 6A - BOAT DISPOSAL AREA FOR
NAVAL STATION LONG BEACH, LONG BEACH.**

The California Department of Toxic Substances Control (Department) has completed its review of the Draft Remedial Site Evaluation (RSE) for Site 6A dated January 17, 1994, for the Long Beach Naval Station, Long Beach. The Draft (RSE) Report for Site 6A was prepared for SouthWest Division Naval Facilities Engineering Command by Bechtel Engineer Corp.

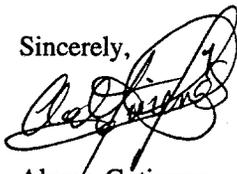
The Draft RSE Report for Site 6A has been prepared to provide information which will support Navy on leasing this property to Port of Los Angeles (POLA). POLA is planning to use this site for the construction of a railroad overpass and an expansion road through Site 6A. In addition, the RSE Report will fulfill the requirements for the Remedial Investigation for soils only. Groundwater investigation was not included on the RSE but will be conducted as proposed on the RI/FS workplan approved by the Department dated October 1993. The Department is not concurring with the recommendation of the RSE report that no remediation of soil is needed as stated in Section 8.3. Results of the PRG screening process presented on various Figures of the report identifies "hot spots". The Department suggests that the risk in these hot spots areas of contamination should be re-assessed.

The Department has compiled general and specific comments on this document from its internal technical staff and from the Regional Water Quality Control Board (RWQCB) which are enclosed within this letter.

Captain Barry Janov
Captain John Jones
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. If you have any questions regarding this letter please contact me at (310) 590-5565.

Sincerely,



Alvaro Gutierrez
Base Closure Team, LBNC
Region 4 Base Closure Unit

Enclosures

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GENERAL COMMENTS and RECOMMENDATIONS

(Note: Recommendations that follow are in **Bold** typeface.)

1. The RSE Report does not utilize site-wide soils data to establish background metals concentrations. Metals analyses on about 55 samples from around the LBNC, and from previous sampling of 18 locations near Site 6A and the RSE analyses clearly indicate a normal distribution of concentrations from which background values could be confidently calculated. The Department of the Navy (*DON*) has ignored the bulk of the data in the production of maps showing soil sample analytical results that are above the Upper Confidence Limit (*UCL*) when the limit is calculated using a very small subset of the data; the results are maps that show too many potential "hits" for metals. Currently there are about 165 data points for each metal and, with the exception of gross shifts in a few of the non-target metals, the data plots clearly indicate consistent, normal distributions. The data shifts are probably caused by differing analytical methods (see the data plots for aluminum, calcium, and iron).

The DON should revise the calculations for the UCL, Upper Tolerance Limits, background and any other statistic that will be used, to include the available data.

2. Appendix E contains laboratory results for constituents that are above the detection limits. There are no listings for the non-detects, thus the Department assume that unlisted data are non-detects. There remains no need for the DON to provide the Department with all the laboratory quality assurance/quality control paperwork, however the data summaries should include all results and all data qualifiers.

The DON should provide data summaries for all the laboratory results and all the data qualifiers.

3. All documents, including drafts, are public documents and those involving geology or ground water plans for investigations, investigation results, or interpretations must be signed by qualified persons appropriately registered by the State of California.

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

4. Because of the apparent difficulty of performing basic data review and evaluation, DTSC may want to consider extending the schedules to permit adequate time for working map development, data graphing, data comparisons, data interpretations and considerations of remaining work to be performed to define just what is the contamination, where is it, and why it is there. Review by DTSC is necessarily more difficult when adequate data evaluation and presentation must be done by the reviewer.

The DON should extend the schedules for data evaluation and presentation to ensure adequate time for considered judgement.

5. We assume that sampling of environmental media, analytical chemistry data, and quality assurance procedures described in these documents and summarized in the document reviewed by OSA were adequately reviewed by Regional staff. If deficiencies or data gaps were encountered with respect to adequacy for risk assessment, these are noted in our comments.
6. The document was reviewed for scientific content. In general, 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.
7. 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 here has been addressed.
8. The draft risk assessment is not acceptable. Because of the way background data for metals have been treated, OSA is not convinced that inorganic chemicals of concern have been identified for Site 6A. Also, Cal/EPA cancer potency factors have been ignored.
9. The Navy should be reminded that the National Contingency Plan (NCP) recommends that the a Removal Site Evaluation should contain an evaluation by the Agency for Toxic Substance Disease Registry (ATSDR) or a State public health agency of the threat to public threat [40 CFR 300.410(c)]. Since ATSDR is not involved with this site, we interpret this requirement to mean that the risk assessment in the Removal Site Evaluation should be acceptable to this Department.
10. Cross sections for the Contaminants of Concern (COC) concentration maps should be included in the report. These cross sections should include the "hot

spots" noted during the recent investigation and will serve as a reference for soil plume interaction with the groundwater.

SPECIFIC COMMENTS and RECOMMENDATIONS

1. **Page 1-1, Paragraph 2:** The Department of Toxic Substances Control (DTSC) requests that the Navy provide clarification for the lease proposal by the Port of Los Angeles (POLA) at Site 6A.

Specifically, does an official lease proposal exist at this time? If so, at what date does the Navy and the POLA anticipate signing the lease agreement? What is the expected duration of the interim lease? Please note, in accordance with DoD Policy on the Environmental Review Process to reach a Finding Of Suitability To Lease (FOSL), as required by CERCLA Section 120(h)(5), DoD shall notify the State prior to entering into any lease that will encumber the property beyond the date of termination of DoD's operations. These notifications shall include the length of lease, the name of lessee, and a description of the uses that will be allowed under the lease of the property.

Please rewrite the third sentence in the second paragraph of page 1-1 to read as follows: This Removal Site Evaluation, in conjunction with the Long Beach Naval Station (LBNS) Basewide Environmental Baseline Survey (EBS), is intended to provide documentation to support both the FOSL and the potential construction activities to be conducted at Site 6A by POLA.

2. **Page 2-1, Fifth Paragraph:** Please rewrite the first sentence to read as follows: "Site 6A covers an area of approximately 20 acres and consists of three main areas".
3. **Page 2-5, first paragraph, second sentence:** Please rewrite this sentence to read as follows: A specific portion of Site 6A is authorized by the State under a Resource Conservation and Recovery Act (RCRA) Permit to temporarily store hazardous wastes and chemicals.
4. **Page 2-5, Second Paragraph, third sentence:** Delete the term "reportedly" from this sentence. Confirm the contents of the above ground storage tank located on the southwestern corner of the referenced vacant lot.
5. **Page 2-6, Top of Page, Line 1:** State that the LBNS is not a National Priority List (NPL) site.

6. **Background Levels, Section 5.3.1, Page 5-8** Background levels as defined in this section and shown on Table 5-6 is calculated using the 18 values from the Port of Los Angeles study nearby. No explanation for using only these values is given. The background values presented in this section are not used in subsequent sections of this report.

The DON should provide an explanation for the using only the 18 values for the background calculations.

7. **Background Data for Metals, Section 5.3.1, p. 5-8:** We are unable to evaluate the adequacy of the 95% upper tolerance limits used to represent background for metals, because individual analytical results are not presented in the report. We are therefore unable to determine if the metals of potential concern have been identified. Table 5-6 presents summary statistics on the background data, but these are not adequate for our purposes. If the sixteen borings used as background contain any uncommonly high values, the 95% upper tolerance limits would be skewed upwards, possibly leading to inappropriate elimination of one or more metals as being of potential concern.

Distributions of data from the fourteen borings from a prior investigation at Site 6B and from the two "background" borings from the Site Inspection can be compared to the remainder of the data collected during the Site Inspection (RI/FS Work Plan, Naval Station Long Beach, Appendix I, "Site Inspection Metals Data Summaries"). These data can be analyzed with various graphical and statistical methods to identify the range of background concentrations of metals at Site 6A.

8. **Statistical Approach, Section 5.3.2, Page 5-8:** The Background UTL is calculated for various shallow depths (0.5 to 7 feet) using up to 88 values. No explanation of the source of the 88 values is given and, as no combination of 0.5, 4.5, and 7 feet deep samples yields 88 samples (39, 32, and 10 samples, respectively), apparently some samples from earlier studies were included. The Background UTL values presented in this section are not used in subsequent sections of this report. There is no hydrogeological reason to suspect different (stratified) background concentrations of metals in the top 7 feet of fill at this facility. A single background calculation is all that is required; there are about 165 data points now, and they describe a very strong log-normal distribution resulting in background being confidently determined and usable for the remainder of the facility.

The DON should use all available data to calculate background by plotting the results, judging the distribution type and applying the appropriate

statistical calculation to determine background and use the results consistently from section to section and site to site.

9. **Analytical Findings, Section 6.2, Page 6-2:** States that an industrial scenario is being used to select screening criteria for the contaminants of concern (COC). The Department was on the understanding that the Navy was using a residential scenario for the Long Beach Naval Complex. The document should state why the residential scenario has been dropped.

In addition, this section states that no volatile organic compounds (VOC's) were detected above the screening criteria and so were not discussed further. The Department believes that all VOC's above the laboratory detection limit should be reported. If no VOC's were detected above the laboratory detection limit then a statement to that effect should be included in the report.

Furthermore, Section 6.2 states that the screening criteria for Total Petroleum Hydrocarbons (TPH) is 1,000 mg/kg. Screening criteria of 100 mg/kg was decided on during a conference call between DTSC, the Regional Water Quality Control Board, and Bechtel. It is not clear to RWQCB why the document reflects screening criteria one magnitude higher than previously agreed to by Bechtel and DTSC. Furthermore, why are the guidelines for leaking fuel tanks and associated piping are being used for a landfill. The Department is requiring that all TPH detected be reported and presented in both the appropriate tables and maps. Proposed screening criteria can then be presented for approval.

10. **Surface Soil, Section 6.2.1, Page 6-2:** *Note, for Sections 6.2.2 and 6.2.3 and Figures 6-6, 6-10, 6-11, and 6-15 the comments and recommendations for the discussions and figures for shallow (4.5 foot deep) and subsurface (7 feet deep) soil metals results are the same as for the surface soil metals results.*

Though labeled as Soil Sample Results @ 0.5 Feet, Figure 6-1 is *apparently* a listing of results that are above the 18 value UCL, but this is not explicitly mentioned. Also, because of using the 18 value UCL, there are many more apparent "hits" than if all the data had been used. Of the approximately 272 metals hits on Figure 6-1, only about 41 are actually above background as visually approximated after plotting all data on a logarithmic scale, and 18 of the 39 locations would show no metal hits (which would eliminate 8 surface locations entirely). All arsenic, barium, beryllium, cadmium, manganese, and vanadium hits drop out when using all the data.

For the shallow soils (Figure 6-6), of the approximately 228 metals hits, only about 42 are actually above background, and 24 of 32 locations would show no

metals hits (which would eliminate 11 shallow locations entirely). All arsenic, manganese, and vanadium hits drop out when using all the data.

For the subsurface soils (Figure 6-11), of the approximately 62 metals hits, only about 13 are actually above background, and 6 of 10 locations would show no metals hits (which would eliminate 5 locations entirely). All arsenic, cadmium, manganese, nickel, and vanadium hits drop out when using all the data.

The remaining metals hits are all obviously much higher than a background calculated using all the data.

The DON should use all available data to calculate background by plotting the results, judging the distribution type and applying the appropriate statistical calculation to determine background. The DON should use the results consistently from section to section and site to site.

11. **Figures 6-5, 6-10 and 6-15 Show contours of metals concentrations for the highest value of any metal above the 18 value UCL. Aside from the lack of utility of the 18 value UCL, there is no reason given for displaying the data in this way. There is no meaning to drawing a contour line between a mercury concentration of 4.4 mg/kg and a zinc concentration of 424 mg/kg.**

The DON should explain the utility of Figure 6-5 and, if any use for the figure can be found, it should be revised to incorporate only those values that exceed a background calculated using all the data.

12. **Hazard Identification, Section 7.2.1, Page 7-3: The method for calculating the Upper Tolerance Limit is not described in Appendix A as referenced. The UTL values listed on Table 7-1 do not agree with others in previous sections of the report and the exact data set used is not identified. For metals, there is no reason to presume that background concentrations in fill at 0.5 feet is different from fill at 4.5 or 7 feet.**

The DON should identify the exact data set used each time a different background, UCL, background UCL, UTL, or background UTL is calculated, and clear rationale presented as why a different data set or calculation method is used. The DON should revise Section 7.2.1

13. **Table 7.1, p. 7-5 ff.: Please include the number of samples included in each calculation of the mean. Please also include the range of limits of quantitation for the samples summarized. Why does Appendix E show no "non-detects"? Are we correct in assuming that the right hand column is the 95% upper**

confidence Limit (UCL) on the mean? Please include in the text in Section 7.2.1 that chemicals were removed from consideration if they were not detected more than once, as is stated in a footnote to Table 7.1.

14. **Toxicity Assessment, Section 7.2.2, p. 7-9:** How were the chemicals treated for which non-carcinogenic toxicity criteria could not be located? OSA recommends selecting surrogate chemicals of similar structure for which criteria are available. The Cal/EPA cancer potency factor for hexavalent chromium via the inhalation route is **510, not 51**. Therefore, cancer risk estimates in the draft report are greatly under estimated for this compound.
15. **Figure 7-1, Page 7-17:** States that the "Primary Source" is surface spill. Since this is a landfill, calling it a surface spill appears to be inappropriate. In addition, this figure refers to Surface Water and Sediment under the heading of Transport Medium. The flowchart then addresses surface water but ignores sediment. The reason for this is not clear and should be identified.
16. **Cancer Risk Estimates, Section 7.2.4.4, p. 7-26 ff. and 7-33 ff.:** For the final report please juxtapose the text on pages 7-33 through 7-35 with the text on page 7-26 and following. This will enable the risk manager to view the range of potential cancer risks posed by Site 6A, as estimated using USEPA and Cal/EPA cancer potency factors. The estimated cancer risk for all pathways for a hypothetical resident is given on page 7-33 as 1.5×10^{-4} , but this figure does not appear in Table 7-5. Is this a composite resident with exposure for six years as a child and 24 years as an adult? If so, this receptor should have been included at several other places in text and tables.
17. **Surface Soil, Section 8.1.1, Page 8-1:** *Note, for Sections 8.1.2 and 8.1.3 the comments and recommendations are the same for shallow and subsurface soils metals results.*

The reporting of metals concentrations above background is based on using only a fraction of the data. The highest detected concentrations of arsenic, barium, beryllium, cadmium, cobalt, nickel and vanadium (arsenic, cobalt, nickel and vanadium at 4.5 feet, and arsenic, cadmium, nickel and vanadium at 7 feet) are well within the bell curves of log-normal distribution when all the data used.

The DON should use all available data to calculate background by plotting the results, judging the distribution type, and applying the appropriate statistical calculation to determine background. The DON should use the results consistently from section to section and site to site and revise

Sections 8.1.1, 8.1.2 and 8.1.3.

18. **Conclusions, Section 8.1.1, Page 8-2:** Figures 6-1 through 6-15 does not present to the Department a clear picture of which areas or volumes of soil are contaminated at unacceptable levels. We would have a better idea if separate maps were presented for each important contaminant.
19. **General Findings and Conclusions, Section 8.1.4, Page 8-4:** The conclusions regarding metals, as well as the tabulated results on Table 8-3 are based on yet another calculation of "background levels" derived from an unidentified data set that is apparently unlike any other data set. The conclusion that "Based on the findings of the RSE, it is apparent that metals represent the primary concern at Site 6A". May be overstated, considering the gross underestimation of background concentrations that has been carried throughout the report by using only a fraction of the available data. Table 8-3 contains listings for arsenic, cadmium, cobalt, manganese, selenium, and vanadium. These metals have been eliminated from each depth (0.5, 4.5, and 7 feet) by using all the data top calculate background.

The DON should use all available data to calculate background by plotting the results, judging the distribution type, and applying the appropriate statistical calculation to determine background. The Don should use the results consistently from section to section and site to site. The DON should revise Table 8-3. The DON should reconsider the conclusions of Section 8.1.4 after using all the available data.

20. **Screening Assessment, Section 8.1.4, Page 8-4 and Tables 8-1 - 8-3:** We do not understand why a screening risk assessment is appended to the end of a baseline risk assessment. No screening level assessment was included in the work plan for Site 6A.
21. **Table 8-3, Page 8-7:** The column labeled "Background Level" does not match any of the columns of summary statistics for metals from Table 5-6. What are these numbers?
22. **Recommendations, Section 8.3, Page 8-11:** Estimates of total cancer risk at Site 6A for the receptor of greatest interest, future workers at the site, is estimated in this report to fall below 1×10^{-4} when USEPA cancer potency factors are used and to exceed 1×10^{-4} when calculated using Cal/EPA cancer potency factors. The NCP [40 CFR 300.430(e)] states that cancer risks of 1×10^{-6} are the point of departure for concern for possible remediation, while those that fall between 1×10^{-6} and 1×10^{-4} might be of concern for remediation (the

"decision range"), and those above 1×10^{-4} usually indicate a need for remediation.

In the absence of any finding on the "appropriateness" Cal/EPA cancer potency factors, the Navy has decided to base its risk management recommendation for Site 6A (i.e. "no action") on the fact that cancer risk estimates calculated from USEPA cancer potency factors fall below 1×10^{-4} . We note that the section of the NCP which deals with Removal Site Evaluations [40 CFR 300.410(c)] makes it clear that the basis for any removal action must be protection of the public health, as interpreted by ATSDR or a State public health agency.

OSA recommends that the Department, as the responsible State public health agency for Site 6A, not accept the rationale for the remedial alternative selected by the Navy. The reason for this recommendation is that the Navy estimates the cancer risk for the most likely future receptor at Site 6A to be greater than 1×10^{-4} , according to guidance on risk assessment practice provided by OSA and cancer potency factors published by Cal/EPA. OSA strongly recommends that the final version of this memorandum be included in the Record of Decision for Site 6A.