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LETTER AND COMMENTS FROM DEPARTMENT OF HEALTH AND HUMAN SERVICES ON  
U S NAVY COMMENTS REGARDING THE PRELIMINARY HEALTH ASSESSMENT 18 JULY  
1997 NSWC INDIAN HEAD MD  
10/2/1997  
U S HEALTH DEPARTMENT



Agency for Toxic Substances  
and Disease Registry  
Atlanta GA 30333

October 2, 1997

Ms. Cheryl Deskins  
Director  
Waste Management and Prevention Division  
Naval Surface Warfare Center  
Indian Head Division  
101 Strauss Avenue  
Indian Head, Maryland 20640-5035

Dear Ms. Deskins:

I have had an opportunity to review the comments provided by the Naval Surface Warfare Center-Indian Head Division (NSWC-IHDIV) on the preliminary draft Public Health Assessment (PHA) for your Activity. In response, I have enclosed comments addressing the issues that you have raised. My response also identifies areas where changes have been made to the PHA, when appropriate, based on the information provided in your July 18, 1997, correspondence.

The public comment version of the public health assessment will be available in the La Plata Branch of the Charles County Public Library and the NSWC-IHDIV General Library on October 3, 1997. Advance copies of the document, ATSDR Information Sheet, and press release, have been provided to Mr. Shawn Jorgensen via overnight mail. The public comment period, which will extend from October 3 through November 7, provides the Restoration Advisory Board, the Indian Head community, and other stakeholders, an opportunity to provide comments on the public health assessment and identify additional potential public health issues and community health concerns.

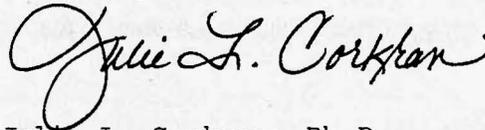
Successful completion of ATSDR's public health assessment activities for any facility depends on obtaining the data and information needed to accurately evaluate a potential exposure scenario and whether health effects are likely to occur. In your July 18, 1997 letter, the NSWC-IHDIV notes that some of our conclusions are based on limited data. ATSDR agrees that evaluation of additional information and data is warranted and has previously requested that information from the Activity. Specifically, ATSDR's requests for (i) mercury medical monitoring data and information, and (ii) blood lead data, related to the exposure scenarios discussed in the PHA remain outstanding. These requests were made by ATSDR during the initial site visit, in the Site Summary, in the preliminary draft PHA, and in discussions since October 1996 with the Activity.

Page 2 - Ms. Cheryl Deskins

ATSDR appreciates the efforts of the Installation Restoration Program (IRP) Manager, Mr. Shawn Jorgensen, who coordinated an excellent site visit for ATSDR and has provided the answers to all of the environmental program questions posed by this agency. I am conscious of the time and human resources needed to fulfill any information request; therefore, I have been careful to request only that information which is directly relevant to the ATSDR public health evaluation. Any effort on your part to ensure that the other programs at the Activity coordinate with Mr. Jorgensen to provide the information needed for our public health assessment activities will be appreciated. Ideally, ATSDR expects to obtain the outstanding data from NSWC-IHDIV during the public comment period so that this information can be evaluated and incorporated into the final version of the public health assessment. The final PHA for NSWC-IHDIV is tentatively scheduled for release in December of 1997.

Please do not hesitate to call me at (404) 639-6094 if I can answer any questions that arise. I look forward to working with you to obtain the additional information and data the NSWC-IHDIV can supply in support of ATSDR's public health protection mission and public health assessment mandate.

Sincerely yours,



Julie L. Corkran, Ph.D.  
Environmental Health Scientist  
Federal Facilities Assessment Branch  
Division of Health Assessment  
and Consultation

Enclosure:

ATSDR response to NSWC-IHDIV comments dated 18 July 1997

cc:

Dr. Kathleen Buchi, USACHPPM

Rob Sadorra, EFA/CHES

Brent Meredith, EFA/CHES

Shawn Jorgensen, NSWC-IHDIV

Gene Astley, Navy Environmental Health Center

David McConaughy, Navy Environmental Health Center

Andrea Lunsford, Navy Environmental Health Center

Donna Lynch, Maryland Department of the Environment

Dennis Orenshaw, USEPA Region III

Tom Stukas, ATSDR Region III Representative

**ATSDR reply to comments provided in NSWC-IHDIV Enclosure 2 (dated 7/18/97)**

For ease of reference, I have numbered the NSWC-IHDIV comments provided in Enclosure 2 and provided a copy of the numbered comments as an attachment to this response. Where useful, NSWC-IHDIV's comments have been paraphrased (*in italics*).

**Comment 1.** *NSWC-IHDIV has requested that ATSDR change the public health conclusion category for the lead exposure issue from "Public Health Hazard" to "Potential Public Health Hazard." NSWC-IHDIV further states that the blood lead screening data demonstrate that "the exposure has NOT caused any children to exceed the Center of Disease Control (CDC) lead value of 10 micrograms per deciliter (ug/dl) of blood."*

NSWC has not demonstrated to ATSDR that the blood leads of children at the base do not exceed the 10 ug/dl public health standard. At the time of ATSDR's visit in October of 1996, Clinic personnel did not have access to a database of blood lead screening data. Clinic personnel offered at that time to obtain, collate, and forward blood lead screening results to ATSDR; however, as of this date, no blood lead data have been provided in support of our public health assessment activities. Further, the volunteer nature of the Navy blood lead screening program, and the limited participation noted by the Clinic personnel during the site visit, precludes both NSWC-IHDIV and ATSDR from down-grading the public health conclusion for this exposure scenario based on a single set of blood lead data from children tested in 1991 (these data were also not provided to ATSDR).

ATSDR has correctly applied the criteria defined in Appendix C of the preliminary draft public health assessment for the lead exposure issue at NSWC-IHDIV: exposures are occurring (children and women of child-bearing age are living in the homes where the concentrations of lead in household paint, dust, and foundation soils exceed public health screening criteria); are likely to occur in the future (until such time as the Navy determines whether it will proceed with mitigation or remediation of internal residential lead and soil lead sources at the NSWC-IHDIV residences); and the estimated exposures exceed an established public health protection criterion for children (as demonstrated the application of the algorithm in Appendix D).

**Comment 2.** The text has been changed to use the word "improve".

**Comment 3.** The text has been changed to "recently developed by the base in conjunction with the Maryland Department of the Environment."

**Comment 4.** *NSWC-IHDIV has requested that ATSDR remove the fish/shellfish consumption issue from the public health assessment.*

**Attachment 1: Page 2**

A review of the public health assessment text demonstrates that ATSDR has exercised caution in discussing the potential fish consumption issue in Mattawoman and Chicamuxen Creeks. In no instance has ATSDR assumed or implied that all of the contamination that may be found in fish in these creeks is from the base. On the other hand, it does not seem reasonable to assume that none of the contamination in the creeks derives from the base and that none of that contamination is available to the fish populations that utilize these aquatic systems. ATSDR would appreciate receiving from NSWC-IHDIV any additional information or documents in which additional evaluation of the chemical contamination in the creek has been performed (for example, recommendations and conclusions from EPA's BTAG).

**Comment 5.** The text has been modified to reflect the recent U.S. EPA interpretation that includes the Stump Neck Annex in the NPL listing for the Naval Surface Warfare Center-Indian Head Division Superfund site.

**Comment 6.** Please refer to Comment 1.

**Comment 7.** The key piece of information, that people who work with lead on the base do not live in any of the base residential units, was not previously provided to ATSDR. References to the potential for a "take home" lead contribution to lead exposures in the NSWC-IHDIV residences have been removed.

**Comment 8.** Please refer to Comment 1.

**Comment 9.** NSWC-IHDIV has suggested additional language regarding the availability of blood lead data. However, the significance of the phrase "and this data is currently unavailable to IHDIV-NSWC Medical personnel, but will be obtained in the future" to the Public Health Assessment is not clear to ATSDR. If NSWC-IHDIV provides clarification regarding the type of data (past, current, future blood leads?) And how the data will be used, ATSDR will consider incorporating additional language into the document.

**Comment 10.** Additional language has been added to the text.

**Comment 11.** Please refer to Comment 7.

**Comment 12.** There are multiple references for this statement: these references have been added to the document.

**Comment 13.** The language has been modified to reflect the current state of NSWC-IHDIV's wellhead protection efforts.

**Comments 14 and 15.** The piece of information that no military personnel have ever worked in buildings 101 or 102 was not previously provided to ATSDR. The text has been modified to reflect this information.

*NSWC-IHDIV questions why ATSDR asserts that mercury vapor concentrations would likely have been higher in these buildings during the pre-1981 time frame.*

ATSDR appreciates the value of the mercury control program practiced by the NSWC-IHDIV. (NSWC-IHDIV does not note in their comment to ATSDR when this program was established.) However, adherence to such a program does not alter the exposure scenario that existed at NSWC-IHDIV in the past and that ATSDR has evaluated in the Public Health Assessment: non-occupational and occupational worker exposures to mercury vapor from *historically uncontrolled, unremediated, spills of elemental mercury*. Because no medical monitoring or mercury poisoning evaluation of non-occupational personnel in these buildings was conducted by NSWC-IHDIV when the exposures to the old mercury spills were discovered in the late 1980s and early 1990s, ATSDR is approaching our evaluation of this scenario through an evaluation of the occupational worker population medical monitoring data and environmental mercury vapor data.

Several factors will determine the concentration of mercury vapor in an enclosed area. Some of these include: the amount of mercury spilled, the surface area exposed to the atmosphere, the size of the room or enclosed space, the ambient temperatures, the age of the spilled mercury, and whether the mercury has been recently disturbed. The events in the late 1980s and early 1990s when drops of mercury were noted in the basements (coffee mess area, on pipe insulation in an office space, etc.) of Buildings 101 and 102, likely represent a release due to a recent disturbance of spilled mercury, perhaps in the course of ceiling or utility line maintenance.

It is reasonable to conclude that, in general, the concentrations of mercury vapor would have been higher at a time closer to when the spills occurred due to the physical and chemical behavior of mercury. Rates of vaporization from spills that accumulated between the first floor flooring and the basement ceiling would have been increased by the higher ambient temperatures in that space that would have resulted from the steam pipes that traverse those spaces. An older spill of mercury will have an oxidized surface "skin" that reduces the rate of vaporization from the surface. Concentrations may have temporarily increased during activities that disturbed the mercury spills (such as maintenance of utility lines, building renovations, floor and ceiling repairs), seasonally with increased use of the steam lines causing increased ambient temperatures in the space above the dropped ceiling where the mercury, or in conjunction with new spills if those occurred. In general, however, the mercury vapor concentrations from the unremediated elemental mercury would have been expected to be lower in the 1980s than in the 1970s or 1960s.

*Comment 15. NSWC-IHDIV suggests that the "take home" mercury scenario addressed by ATSDR in the public health assessment is unlikely to have taken place. In support of this position, NSWC-IHDIV provides a review of the base's industrial hygiene program elements.*

The Public Health Assessment text has been amended to provide additional discussion of the basis for our consideration of this scenario. In brief, spills of mercury dating to the mid-1960s are documented in NSWC-IHDIV memos. This spilled mercury went unremediated throughout the time when the buildings were in use. During that time, a population of workers not trained in mercury handling worked in these buildings. The extent of the mercury contamination in these buildings is not known:

sampling to define the extent of contamination has not yet been performed under the Installation Restoration Program. However, NSWC-IHDIV memoranda document mercury contamination in the ceiling/floor space, in ceiling tiles, in the flooring, on pipe insulation, in the coffee mess area, and in the sanitary and storm drainage pipes. Taken together, these factors suggest a potential for past tracking of mercury from these buildings into workers homes.

ATSDR has determined that a screening effort which focuses on the homes where the 1960-1991 workers lived is an appropriate public health response to this potential exposure scenario.

*Comment 16. NSWC-IHDIV suggests that all ATSDR recommendations regarding the mercury issue be removed from the public health assessment. NSWC-IHDIV suggests that "a more useful recommendation would be for us to locate as much information as possible on the mercury medical monitoring of laboratory personnel for your review."*

**RE: past mercury exposure**

ATSDR proposed only one recommendation regarding the past mercury exposure scenario: this recommendation is restated (from the preliminary draft PHA) in its entirety below.

"ATSDR needs additional data and information to complete our evaluation of potential past exposures to mercury in Buildings 101 and 102. ATSDR and NSWC-IHDIV are working together to obtain and evaluate the records from any past mercury-related medical surveillance activities conducted by NSWC-IHDIV for employees working in Buildings 101 and 102. Some of these data have been provided by NSWC-IHDIV in a text summary form to ATSDR; however, ATSDR typically performs an independent evaluation of the primary data and medical records in order to draw conclusions about potential exposure-related health effects."

ATSDR and NSWC-IHDIV appear to be in agreement regarding the need to locate the additional information needed to complete our evaluation of this exposure scenario.

**RE: "Take home" mercury scenario**

ATSDR has removed the second bullet on page 20. Please refer to Comment 15.

**RE: "Future building use" scenario**

The recommendation regarding use of these buildings, prior to whatever cleanup may take place, stems primarily from the concerns noted below.

1) IRP documents reviewed by ATSDR prior to our NSWC-IHDIV site visit stated that Building 102 was closed and secured from entry. However, at the time of ATSDR's site visit in October of 1996, all but two of the doors to Building 102 were unlocked and/or standing open. Because this building is in the Restricted Area, this was of limited concern until we learned that, in the recent past, personnel had been using a portion of the basement area for unauthorized drum storage. ATSDR requested that Safety evaluate the whether the building was open as part of a formal activity or in error. Before ATSDR left the base, Safety had arranged for the doors to be secured.

2) Requests to use the space in Buildings 101 and 102, prior to characterization of the scope of contamination and cleanup, are being presented to Safety for consideration.

*Comment 17. Regarding fish tissue sampling, NSWC-IHDIV suggests "a more useful recommendation would be to have us supply any information concerning biota that we obtain through sampling."*

ATSDR reiterates the desire to review any draft work plan that involves fish tissue sampling and analysis in Mattawoman and Chicamuxen Creeks. It cannot be assumed that, in the absence of ATSDR input, data of the quality and quantity required by ATSDR to evaluate this potential public health issue would necessarily be included in the Work Plan. It is not unreasonable to predict that ATSDR, BTAG, and NSWC may have different data needs with respect to the questions that each group is trying to answer through sampling. These needs impact issues that include, for example, the species of fish, gender, reproductive status, season of sampling, sampling locations, and sample population size.