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NSTC GREAT LAKES
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LETTER AND COMMENTS FROM ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
REGARDING DRAFT REMEDIAL INVESTIGATION/RISK ASSESSMENT SITE 5
TRANSFORMER STORAGE BONEYARD NSTC GREAT LAKES IL
4/25/2012
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



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April 25, 2012

NAVFAC Midwest IPT EV
Attn: Ms. Terese Van Donsel
Building 1A
201 Decatur Avenue
Great Lakes, Illinois 60088-2801

Re: Draft Remedial Investigation/Risk Assessment
for Site 5 — Transformer Storage Boneyard
Naval Station Great Lakes
Great Lakes, Illinois

0971255048 — Lake County
Great Lakes Naval Station
Superfund/Technical

Dear Ms. Van Donsel:

The Illinois Environmental Protection Agency (Illinois EPA or Agency) is in receipt of the Navy's *Draft Remedial Investigation/Risk Assessment Report for Site 5 — Transformer Storage Boneyard, Naval Station Great Lakes, Great Lakes, Illinois*. The Remedial Investigation/Risk Assessment Report was drafted by Tetra Tech NUS, Inc. on behalf of the Naval Facilities Engineering Command Midwest (Navy). It was dated August 2011 and was received at the Agency on September 08, 2011. The report summarizes the environmental investigation of Site 5 and the subsequent human health risk assessment for the site. The Agency has conducted a review of this submittal and is herein providing comments generated during that review.

- 1) **Acronyms** — This page, identified in the Table of Contents as page ix, is missing in the copy being reviewed.
- 2) **Section 4** — It appears that the eastern edge of the site has carbon tetrachloride and chloroform contamination in the surface soil, subsurface soil, and the groundwater (north-east corner). The extent of this contamination has only been defined in one direction, to the west. Additional investigation, consistent with the discussion in Section 3.1, is warranted to determine the full extent of this contamination. A manganese exceedance in the center of the site and a tetrachloroethene detection on the south-east edge of the site may also warrant additional investigation. Looking at the RI data for Site 9, there is also a tetrachloroethene detection in soil in sample NTC09-04-B, which is located just to the south-east of Site 5.

- 3) **Section 4.2.1** — As noted in this section, the groundwater zones found in MWO2 "were discontinuous with the water-bearing zones of the other four monitoring wells." Therefore, contamination found in other wells would not be expected to be found in or to migrate to this one and vice-versa. In fact, according to the data provided in the appendices, this well did not even yield samples for analysis for VOCs, SVOCs, or PAHs, which means there is no way to confirm this. However, this lack of sample analyses is not pointed out in the text of the report, on the figures, or in the tables, save Table 3-2. Please explain how this deviation from the SAP has not been identified and called out in the report. The report will need to be revised to include this information where appropriate.

It should also be noted that since MWO2 did not yield samples for analysis for VOCs, SVOCs, or PAHs, the VOC contamination identified in MWO5 has not been delineated in either the southerly or easterly (down gradient) directions. (The groundwater flow at Site 5 is reported in this RI as being in a south-easterly direction.) This will need to be rectified before the risk assessment can be completed.

- 4) **Table 4-7** — This table should also provide the Class II groundwater screening values as they may be relevant for this site.
- 5) **Figure 4-18** — The note in the Legend that states all values are expressed in tg/kg is incorrect. The values for groundwater are in mg/L.
- 6) **Figures 4-19 and 4-20** — There are no values on this figure in mg/kg, so its reference is unnecessary in the Legend.
- 7) **Table 5-1** — Under VOCs, it appears carbon tetrachloride has been omitted from this table.
- 8) **Section 6.3.1** — The fifth bullet in the second paragraph and the second bullet in the sixth paragraph specify that the Regional Screening Level tables were used to develop surface and subsurface soil criteria. The Section 6.0 tables presenting these results reference the Regional Screening Level tables (RSL) dated 2004 and 2008. The RSL tables are updated quarterly and the most current version should be used.
- 9) **Section 6.3.1** — In the third paragraph, a process for eliminating chemicals from evaluation for inhalation risk is presented. This is contrary to standard risk assessment practices that require all routes be assessed for each COPC and the total risks and hazards from all pathways calculated and presented. However, it is not clear that this proposed elimination process was even necessary for this site. Suggest the Navy review the data, and if it was not necessary, remove the referenced paragraph altogether, otherwise, provide justification for deviating from standard risk assessment practice.

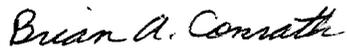
- 10) **Section 6.3.2** — It states directly below the bulleted list that "constituents were identified as COPCs in surface soil because maximum concentrations exceeded USEPA ORNL RSLs or Illinois TACO risk-based screening levels". It should point out that this does not take into account the screening values for the Soil Component of the Groundwater Ingestion Exposure Route. This comment applies to Section 6.3.3 as well.
- 11) **Section 6.3.3** — Please explain why the Aroclors were determined not to be chemicals of potential concern for subsurface soils.
- 12) **Section 6.3.4** — The last sentence on page 6-11 states the maximum concentration of benzo(a)pyrene was less than the Illinois TACO background value. That statement is incorrect. According to the results provided in Section 4 and Table 4-3, there are several samples with benzo(a)pyrene concentrations above the background value listed for surface soil. Please review the data and revise the text and the following table as necessary.
- 13) **Section 6.4.5** — The last paragraph briefly explains the source of the inhalation particulate emission factor. However, no mention is made of the derivation of the chemical-specific volatilization factors (VF). Please add VF to the discussion.
- 14) **Section 6.4.5.2** — The Inhalation of Volatiles through Hypothetical Domestic groundwater Use discussion is incomplete. An equation for calculating "S", the volatile chemical generation rate, should be added and defaults for EF, ED, AT, Ra, Ds, and Dt should be provided in the discussion paragraph.
- 15) **Section 6.7.2.3** — At the top of page 6-45, it again states that the maximum concentration of benzo(a)pyrene was less than the Illinois TACO background value. That statement is incorrect, as noted above.
- 16) **Section 6.7.4** — This section references Tables 6-17 and 6-18 for comparisons of soil concentrations to the soil to groundwater screening values. The reference should be to Tables 6-18 and 6-19.
- 17) **Section 6.7.4** — The last sentence on page 6-47 states that it is unlikely that the concentrations of constituents in soil would adversely impact groundwater quality because the leaching targets are conservative and most of the soil concentrations are low. If that were truly the case, then there should not be any groundwater exceedances for any of the soil contaminants at this site. However, that is not the case. As an example, if one looks at the carbon tetrachloride concentrations on site, you will see that there are just a few minor exceedances in the surface soil (3), a greater number of exceedances in the subsurface soil (7), and finally an exceedance in the groundwater. (It should be noted that the groundwater contamination for this constituent has not been delineated.) This would tend to show that the carbon tetrachloride contamination has migrated/leached through the soil to the groundwater.

- 18) **Section 6.7.4** — This subsection should conclude with a statement regarding the uncertainty and whether the associated risks are over or underestimated, as is done for the other related subsections. The State believes site risks would be underestimated by not accounting for the soil to groundwater pathway.
- 19) **Section 7.1.1** — In the second paragraph, the next to last sentence needs clarification. Should it read "...were the PAHs that exceeded *only* the minimum USEPA screening criteria"?
- 20) **Section 7.3** — The discussion here covers PCBs, PAHs, and metals detected in the soil and groundwater. It fails to discuss the VOCs that were also detected, specifically carbon tetrachloride and chloroform. This contamination needs to be discussed here as well.
- 21) **Section 7.4** — Illinois EPA, as stated previously, recommends additional investigation to determine the extent of the carbon tetrachloride and chloroform contamination (both soil and groundwater) on the eastern edge of the property and possibly to delineate the manganese exceedance in the center of the site and the tetrachloroethene contamination found on the south-east edge of the property. Such investigation would require collection of samples outside of the currently drawn site boundaries, although still on Navy owned property.
- 22) **Appendix A-2** — A number of the sample log sheets are missing information such as the date, PID readings, Sampled by, time, and XRF readings. Many do not have the sample type box or boxes checked. The sample log sheet for boring SB16 is missing all of these. This lack of documentation raises questions about the sample collection process.
- 23) **Appendix A-3** — The monitoring well installation sheet for well MWO2 does not provide the development method, the type of screen, the slot size and length of the screen, or the type of sand pack. Also, based upon the information that is provided, the screen length would have to be 15 feet. All of the other wells had 10 foot screens as is reported in the text. Please explain this discrepancy/deviation.
- 24) **Appendix A-4** — The well development log sheet provided herein does not provide the specified information. The only entries on the page are water level readings and total depths of the wells. It should also be noted that MWO2 appears to be significantly different than the other monitoring wells at this site.
- 25) **Appendix A-8** — None of the chain-of-custody forms have a received by entry (name, date, time). Please provide properly filled out forms. In addition, there are numerous entry errors on the forms, which have not been properly corrected.

If you have any questions regarding anything in this letter or require any additional information, please contact me at (217) 557-8155 or via electronic mail at brian.conrath@a.illinois.gov.

In accordance with Public Act 96-0603, which went into effect on August 24, 2009, any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Sincerely,



Brian A. Conrath
Remedial Project Manager
Federal Facilities Unit
Federal Site Remediation Section
Bureau of Land

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Mkt

cc: Bob Davis, Tetra Tech NUS, Inc.
Owen Thompson, USEPA (SR-6J)