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NSTC GREAT LAKES  
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LETTER REGARDING ILLINOIS ENVIRONMENTAL PROTECTION AGENCY COMMENTS  
ON DRAFT FOCUSED FEASIBILITY STUDY FOR SITE 5 TRANSFORMER STORAGE  
BONEYARD, SITE 9 CAMP MOFFETT RAVINE FILL AREA AND SITE 21 BUILDINGS  
1517/1506 AREA NSTC GREAT LAKES IL  
8/8/2013  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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PAT QUINN, GOVERNOR

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August 8, 2013

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

Re: Focused Feasibility Study Site 5 - Transformer  
Storage Boneyard, Site 9 – Camp Moffett Ravine  
Fill Area, and Site 21 – Buildings 1517/1506 Area  
Naval Station 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 Focused Feasibility Study Site 5 – Transformer Storage Boneyard, Site 9 – Camp Moffett Ravine Fill Area, and Site 21 – Buildings 1517/1506 Area, Naval Station Great Lakes, Great Lakes, Illinois*. The Focused Feasibility Study (FFS) was drafted by Tetra Tech NUS, Inc. on behalf of the Naval Facilities Engineering Command Midwest (Navy). It was dated June 2013 and was received at the Agency on June 28, 2013. The FFS presents the development and evaluation of remedial alternatives for the remediation for current and hypothetical future land use activities at these three sites. The Agency has conducted a review of this submittal and is herein providing comments generated during that review.

- 1) **Sections 1.2.3, 1.3.3, and 1.4.3** – These sections discuss the level of contamination at each site relative to USEPA screening criteria and Illinois EPA's Tiered Approach to Corrective Action Objectives (TACO). These sections do not indicate whether the waste, contaminated soil, or groundwater exhibited a characteristic of a hazardous waste, or if data exists to indicate these media contain a listed hazardous waste. This information is critical to properly identify the regulatory classification of the waste and contaminated soil and to identify the Applicable or Relevant and Appropriate Regulations (ARARs) for any proposed remedial action. These sections should be revised to indicate if the waste or contaminated media at each site exhibit a characteristic of a hazardous waste or would contain a listed hazardous waste, if generated. Soils should not be excavated unless their regulatory classification has been determined. On-site management of hazardous waste can trigger additional hazardous waste ARARs.

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2125 S. First St., Champaign, IL 61820 (217)278-5800  
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9511 W. Harrison St., Des Plaines, IL 60016 (847)294-4000  
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2309 W. Main St., Suite 116, Marion, IL 62959 (618)993-7200  
100 W. Randolph, Suite 10-300, Chicago, IL 60601 (312)814-6026

- 2) **Section 2.2.1** – Under both Surface and Subsurface Soil – Residential, it is understood why the TACO values for ingestion and inhalation have been chosen as potential PRGs, since they represent a risk-based level of  $10^{-6}$ . However, one of the other potential PRGs is listed as “ILCR  $10^{-5}$  Risk-based PRG using USEPA methods (considered  $10^{-4}$  to  $10^{-6}$ , but generally found to be protective)”. Please provide justification for potentially using the  $10^{-5}$  value rather than the  $10^{-6}$  value. According to the NCP, “First, EPA will use an individual lifetime excess cancer risk of  $10^{-6}$  as a point of departure for establishing remediation goals for the risks from contaminants at specific sites.” Illinois EPA requires a calculated cancer risk level of  $1 \times 10^{-6}$  as the remedial action objective when developing remedial alternatives. Sites where the risk level falls between  $1 \times 10^{-4}$  and  $1 \times 10^{-6}$  are not necessarily considered protective, but require risk management decisions to be made and will likely require institutional controls.
- 3) **Section 2.2.1** – Under both Surface and Subsurface Soil – Residential, Illinois EPA does not agree with the third step in the PRG selection process, in which the greater of the two PRG values is selected so as not to be overly conservative. As noted above, the Agency requires a calculated cancer risk level of  $1 \times 10^{-6}$  as the remedial action objective when developing remedial alternatives.
- 4) **Section 2.4** – Please explain why the depth of contamination for the estimated volume of contaminated soil in the surface and subsurface is stated as being “not deeper than the water table in any case.” If the remedy includes a removal, all contamination or waste above the PRGs should be removed regardless of whether it is above or below the water table.
- 5) **Table 2-2** – This table states there are no State or Federal Location-Specific ARARs. The FFS should clarify that the Navy has considered the following regulations and found that they are neither applicable nor relevant and appropriate: 35 Illinois Administrative Code (IAC) 703.184, 724.118, 35 IAC 811.102, 811.302, and Section 22.19a and 22.19b of the Illinois Environmental Protection Act.
- 6) **Table 2-3** – Other State requirements that will be potentially applicable at these sites are the Uniform Environmental Covenant Act (UECA) at 765 ILCS 122 and the Illinois Solid Waste and Special Waste Hauling regulations at 35 IAC 809. The sections describing the remedial alternatives should describe how those alternatives comply with these requirements.
- 7) **Table 2-4** – The values used in this and all subsequent tables should be the most up-to-date values available. Since the TACO regulations have just been updated, any revised values should be used and appropriately referenced.
- 8) **Table 2-4** – The following surface soil PRGs and the basis for use should be revised as noted:
  - Arsenic – 13 mg/kg (background)
  - Manganese – 1600 mg/kg (TACO Residential Ingestion)
  - Benzo(k)fluoranthene – 1500  $\mu$ g/kg (ILCR= $1E-6$ )

9) **Table 2-4** – The following sub-surface soil PRGs and the basis for use should be revised as noted:

- Manganese – 1600 mg/kg (TACO Residential Ingestion)
- Benzo(a)anthracene – 900 µg/kg (TACO Residential Ingestion)
- Benzo(a)pyrene – 90 µg/kg (TACO Residential Ingestion)
- Benzo(b) Fluoranthene – 900 µg/kg (TACO Residential Ingestion)
- Benzo(k)fluoranthene – 1500 µg/kg (ILCR=1E-6)
- Dibenzo(A,H)anthracene – 90 µg/kg (TACO Residential Ingestion)
- Indeno(1,2,3-CD)pyrene – 900 µg/kg (TACO Residential Ingestion)

10) **Table 2-5** – This table omits lead and it's PRG of 400 mg/kg. Also, the following sub-surface soil PRGs and the basis for use should be revised as noted:

- Manganese – 1600 mg/kg (TACO Residential Ingestion)
- Benzo(a)anthracene – 900 µg/kg (TACO Residential Ingestion)
- Benzo(a)pyrene – 90 µg/kg (TACO Residential Ingestion)
- Benzo(b) Fluoranthene – 900 µg/kg (TACO Residential Ingestion)
- Benzo(k)fluoranthene – 1500 µg/kg (ILCR=1E-6)
- Dibenzo(A,H)anthracene – 90 µg/kg (TACO Residential Ingestion)
- Indeno(1,2,3-CD)pyrene – 900 µg/kg (TACO Residential Ingestion)

11) **Table 2-6** – The following surface soil PRGs 6 and the basis for use should be revised as noted:

- Arsenic – 13 mg/kg (background)
- Benzo(k)fluoranthene – 1500 µg/kg (ILCR=1E-6)
- Chrysene – 88,000 µg/kg (TACO Residential Ingestion)

12) **Table 2-6** – The following sub-surface soil PRGs and the basis for use should be revised as noted:

- Arsenic – 13 mg/kg (background)
- Benzo(a)anthracene – 900 µg/kg (TACO Residential Ingestion)
- Benzo(a)pyrene – 90 µg/kg (TACO Residential Ingestion)
- Benzo(b) Fluoranthene – 900 µg/kg (TACO Residential Ingestion)
- Benzo(k)fluoranthene – 1500 µg/kg (ILCR=1E-6)
- Chrysene – 88,000 µg/kg (TACO Residential Ingestion)
- Dibenzo(A,H)anthracene – 90 µg/kg (TACO Residential Ingestion)
- Indeno(1,2,3-CD)pyrene – 900 µg/kg (TACO Residential Ingestion)

13) **Table 2-7** – There are two columns identified as “TACO Industrial/Commercial Inhalation <sup>(2)</sup>.” The second column should read “TACO Industrial/Commercial Ingestion <sup>(2)</sup>.”

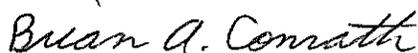
- 14) **Table 2-8** – This table omits lead and its PRG for groundwater, which should be 7.5 µg/L.
- 15) **Section 2 Figures** – Any revisions of the PRGs as noted above will need to be revised within these figures as well.
- 16) **Figure 2-6** – This figure omits the lead exceedances in the subsurface soil. These should be identified here.
- 17) **Sections 4.2.1, 4.2.2, and 4.2.3** – In each case, a part of two of the remedial alternatives listed includes the term “cover”. That is a fairly non-descript term. Please explain in each case what is meant. Would that be considered an engineered barrier or a landfill cap?
- 18) **Sections 5, 6, and 7** – The subsections of these sections describing how each alternative complies with the ARARs and TBCs should identify the ARARs and describe how the remedy would comply with them.
- 19) **Section 5.1.2** – The title for Alternative 5-2 is LUCs, Cover, and Monitoring. Suggest using the term engineered barrier, rather than cover for this alternative. In addition, the “cover” is only described as the existing pavement. A better description of what the actual barrier material will be comprised of is required. Will it be 4 inches of concrete, 6 inches of asphalt, three feet of compacted clay, or a combination of these? Please be more specific.
- 20) **Section 5.1.2.1** – The surveyor mentioned in this section should be an Illinois licensed professional surveyor.
- 21) **Section 5.1.3 and 5.1.3.1** – See previous comments regarding Section 5.1.2 and 5.1.2.1.
- 22) **Section 5.1.3.1, 6.1.3.1, and 7.1.3.1** – The approximate dimensions of the proposed ISCO treatment area should be provided here along with the number of proposed wells.
- 23) **Table 5-1** – Under Alternative 5-2A for Short-Term Effectiveness in the first line, remove the word “not”. Implementing In-situ Chemical Oxidation (ISCO) would result in a slight increase of risks to remediation workers.
- 24) **Section 5 Figures** – Any revisions of the PRGs as noted above will need to be revised within these figures.
- 25) **Figure 5-4** – Please explain why this figure is included. The previous figure already provides the soil excavation limits for Alternative 5-3. This figure merely breaks out the soil to be excavated for the subsurface only. There is no option provided in Alternative 5-3 for excavating only surface or subsurface soil, so this figure is unnecessary.

- 26) **Section 6.1.2** – The title for Alternative 9-2 is LUCs, Cover, and Monitoring. Suggest using the term landfill cap or cap, rather than cover for this alternative. In addition, the “cover” is only described as the existing soil cover, pavement, and buildings. A better description of what the actual cap materials will be comprised of is required. Will it be 4 inches of concrete, 6 inches of asphalt, three feet of compacted clay, or a combination of these? Please be more specific.
- 27) **Section 6.1.2.1** – The surveyor mentioned in this section should be an Illinois licensed professional surveyor.
- 28) **Section 6.1.2.2** – On page 6-4 under Compliance with ARARs and TBCs, the last paragraph states that supplemental landfill cover improvements are not required. Without a description of the materials being referenced here, there is no way to confirm that statement. Sufficient justification needs to be provided to back up such a statement.
- 29) **Section 6.1.3 and 6.1.3.1** – See previous comments regarding Section 6.1.2 and 6.1.2.1.
- 30) **Section 6.1.3.2** – On page 6-7 under Compliance with ARARs and TBCs, the last paragraph states that supplemental landfill cover improvements are not required. Without a description of the materials being referenced here, there is no way to confirm that statement. Sufficient justification needs to be provided to back up such a statement.
- 31) **Table 6-1** – Under Alternative 9-2A for Short-Term Effectiveness in the first line, remove the word “not”. Implementing In-situ Chemical Oxidation (ISCO) would result in a slight increase of risks to remediation workers.
- 32) **Section 6 Figures** – Any revisions of the PRGs as noted above will need to be revised within these figures. The figures also do not show the lead exceedances.
- 33) **Figure 6-1** – The location of the box for the Groundwater LUC Boundary appears to be incorrect. Please review and revise as necessary.
- 34) **Figure 6-2** – The location of the box for the ISCO Treatment Area appears to be incorrect. Please review and revise as necessary.
- 35) **Figure 6-3** – The excavation limits are not delineated in this figure, as stated. Please review and revise as necessary.
- 36) **Section 7.1.2** – The title for Alternative 21-2 is LUCs, Cover, and Monitoring. Suggest using the term engineered barrier, rather than cover for this alternative. In addition, the “cover” is only described as the existing pavement. A better description of what the actual barrier material will be comprised of is required. Will it be 4 inches of concrete, 6 inches of asphalt, three feet of compacted clay, or a combination of these? Please be more specific.

- 37) **Section 7.1.2.1** – The surveyor mentioned in this section should be an Illinois licensed professional surveyor.
- 38) **Section 7.1.2.2** – Under Short-Term Effectiveness, sustainability is listed as moderate. However, the values provided are identical to those listed for Alternative 9-2 and its sustainability value is listed as low. Please rectify this discrepancy.
- 39) **Section 7.1.3 and 7.1.3.1** – See previous comments regarding Section 7.1.2 and 7.1.2.1.
- 40) **Section 7.1.5** – The title of this subsection leaves out ISCO, which is part of this alternative.
- 41) **Table 7-1** – Under Alternative 21-2A for Short-Term Effectiveness in the first line, remove the word “not”. Implementing In-situ Chemical Oxidation (ISCO) would result in a slight increase of risks to remediation workers.
- 42) **Section 7 Figures** – Any revisions of the PRGs as noted above will need to be revised within these figures.
- 43) **Appendix A** – The title of this appendix is misspelled.
- 44) **Appendix D** – The title of the cost estimate pages for Alternative 21-2A is incorrect. It should read Alternative 21-2A: LUCs, Cover, ISCO, and Monitoring.

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@illinois.gov](mailto:brian.conrath@illinois.gov).

Sincerely,



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

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