

**RESPONSE TO COMMENTS
ILLINOIS EPA REVIEW
July 24, 2009
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1. **SAP Worksheet #7** – Under Responsibilities, there are numerous instances where a line or part of a sentence begins with the word “Makes”, when the word used should be “Ensures”.
Response: *This correction has been made.*
2. **SAP Worksheet #10** – The sampling and analysis plan includes no evaluation of surface soils. From an environmental risk perspective, this is a major omission. Typically, it is the surface stratum that is the most risky in hazard determinations for current receptors. The report fails to discuss the rationale for exempting the surface soils and provides no evidence that this stratum is uncontaminated or that it has been previously evaluated. It is understood that the vast majority of the site is currently overlain by buildings or paved parking areas, but there should still be at least a few surface soil samples collected to address that exposure route.
Response: *During the June 2009 and November 2009 DQO meetings investigation of the surface soil at the site was considered and it was agreed at that time that surface soil was not a media of concern. It was agreed that the surface soil media would not be evaluated for the anticipated receptors. Numerous construction activities have taken place at the site. The surface soil would not be representative of the ravine conditions.*
3. **SAP Worksheet #11, Section 11.1** – Under number one in the study goals, it states “...the project team will consider the use of LUCs as a remedy for the site.” Although that may be accurate, a single remedy should not be called out at this point of the investigation. Until the data has been collected and evaluated, the team cannot know what the risk drivers for this site are and therefore must consider all possible remedies for the site. In addition, it is unlikely that mere land use controls will be sufficient to manage the unacceptable risk which may be attributed to this site.
Response: *The sentence was revised to say “If human health risks are unacceptable, the project team will consider remedial alternatives for the site.”*
4. **SAP Worksheet #11, Section 11.1** – Under number two in the study goals, suggest ending the last sentence with “...then further investigation *may not be* required.”
Response: *This sentence was revised as suggested.*
5. **SAP Worksheet #11, Section 11.1** – Under number one in the Information Inputs, the sentence here does not make sense. Please review and revise as necessary.
Response: *The sentence was revised to say “Historical information and site documents were used to determine the possible source and location of contamination.”*
6. **SAP Worksheet #11, Section 11.1** – Under number seven of the Information Inputs, it mentions that indoor air samples will be collected should volatile organic compound be detected in the soil or groundwater. Indoor air sampling can be helpful in determining exposure to volatile chemicals; however the results seldom provide a clear picture of the source of the indoor contaminants. We suggest that point #7 be revised to state that “...indoor air samples may be collected...”. It should also specify the type of air samples, e.g. sub slab soil gas, indoor air, etc...
Response: *Suggested revision was made to sentence.*
7. **SAP Worksheet #11, Section 11.1** – In line seven under Project Action Limits, the correct definition of TACO is Tiered Approach to Corrective Action Objectives.
Response: *This correction has been made.*
8. **SAP Worksheet #11, Section 11.1** – Under Temporal and Spatial Boundaries, the location of the site is said to be bounded by Spaulding Street, Kentucky Street, a parking lot and 12th Street, and Kentucky Street and 11th Avenue. None of these are identified on any of the figures provided. Please provide a figure or figures identifying these boundaries.
Response: *The correct street names were added to Figures 10.2, 10.3, 10.4, 17.1 and 17.2.*

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9. **SAP Worksheet #11, Section 11.1** – Under Temporal and Spatial Boundaries, it states the aquifer will be investigated to a depth of approximately 25 feet below ground surface. It should probably also state that, if necessary, Phase II of this RI may extend to a greater depth, depending on the results of Phase I.
Response: *The following sentence was added to the paragraph about the groundwater boundary "If the groundwater data from the SI are greater than screening values, the groundwater investigation may extend to a greater depth in the RI."*
10. **SAP Worksheet #11, Section 11.1** – On page 26, in the first paragraph remove "1." from the beginning of the paragraph. In the second sentence, suggest revising to "...may involve collecting soil vapor samples from below..." Correct the spelling of "criteria". The final sentence should be revised and expanded for clarity.
Response: *Suggested revisions were made to the first paragraph on page 26. The final sentence in the first paragraph was revised to say "If chemical concentrations decrease to less than the PALs in any of the soil boring locations they will be documented and utilized during and RI/RA."*
11. **SAP Worksheet #15** – The TACO-based Project Action Limits were checked for accuracy and several discrepancies were noted. These discrepancies are based on new and revised screening values from the Agency's proposed amendments to TACO. The internet citation for the amendments is given in the later comment for Appendix B. In addition, footnote #3 is incorrect. It should state that the value is based on chromium VI. Finally, please explain the entries in the column titled "Project Quantitation Limit Goal" and explain why these project goals apparently cannot be achieved.
Response: *The Worksheet was reviewed and corrected based on the new and revised screening vales. Footnote #3 was corrected.*

The Project Quantitation Limit Goal is 1/3rd of (three times lower than) the Project Action Limit on Worksheet #15. This Project Quantitation Limit Goal is included in the Intergovernmental Data Quality Task Force Workbook for Uniform Federal Policy for Quality Assurance Project Plans and is a number that the Navy Chemist has requested. It is used for the procurement of the laboratory that will conduct this work.
12. **SAP Worksheet #15** – Another source for determining the Project Action Limits for groundwater should be the regulations found at 35 Illinois Administrative Code (IAC) 620. These are State of Illinois regulations for groundwater quality and are considered to be Applicable or Relevant and Appropriate Regulations (ARAR).
Response: *The Worksheet was reviewed and corrected based on the new and revised screening value.*
13. **SAP Worksheet #16** – The deliverable date for the Draft SAP is improperly listed as 3/35/09.
Response: *The deliverable date for the Draft SAP was corrected to 4/25/09*
14. **SAP Worksheet #16** – The review times for Illinois EPA for the draft documents are both listed as 30 calendar days. The Agency is typically allowed 30 working days for review of these documents.
Response: *The Illinois EPA review times for the draft documents were changed to allow for 30 working days.*
15. **SAP Worksheet #17** – Add a "start" designation to the upper left block of the figure. Indicate the action to be taken should answer to upper right block be "no".
Response: *Suggested revisions were made to the figure on Worksheet #17.*

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16. **SAP Worksheet #20** – Many of the listed values in the Total No. of Samples to Lab column do not appear to be accurate. Please review and revise as necessary.

Response: *The Total No. of Samples to Lab column was revised to reflect the accurate values.*

17. **Figure 17.1** – Several of the soil boring locations are missing their identifications. Samples numbered NTC9-SB1-B, NTC9-SB3-B, NTC9-SB5-B, NTC9-SB7, NTC9-SB10, NTC9-SB14, NTC9-SB17, and NTC9-SB20 are the samples affected.

Response: *Revisions were made to Figure 17.1 to show missing soil boring location identifications.*

18. **Appendix A** – On the title page, the word safety has been misspelled.

Response: *The revision was made based on the comment.*

- 19) **Appendix B, Sections 1.2 and 1.2.1** – In both of these sections, there is mention of using background concentrations of contaminants in soil as screening objectives such that “If the maximum concentration of a constituent exceeds any of these criteria, and if the constituent is considered to be present at concentrations greater than the concentrations of chemicals in background soil, the chemical will be selected as a COPC.” Illinois EPA can agree to this for inorganic contaminants only. Background values for organic constituents are for use as part of the risk assessment to determine the need for action, not for screening out chemicals of potential concern.

Response: *Appendix B, Section 1.2 was corrected to read: “In general, a chemical will be selected as a COPC and retained for further quantitative risk evaluation if (1) the maximum detection in a sampled medium exceeds the lowest risk-based concentration and (2) for inorganic contaminants, if the chemical is determined to be present at concentrations exceeding concentrations in background samples.”*

Appendix B, Section 1.2.1 was corrected to read: “If the maximum concentration of a constituent exceeds any of these criteria, and, for inorganics only, if the constituent is considered to be present at concentrations greater than the concentrations of chemicals in background soil, the chemical will be selected as a COPC.”

- 20) **Appendix B, Section 1.2** – In the first full paragraph on the subject page, the last sentence states that the detection limits are “unlikely” to be above the action levels for this project. Worksheet #15 shows this to be incorrect. While in the planning stage it is impossible to anticipate which chemicals will be detected, the statement seems overly optimistic. Compounds with action levels below detection limits should be carried forward as COPCs.

Response: *The sentence in Appendix B, Section 1.2 was corrected to read: “If a detection limit is above the action levels for Site 9 for a specific compound, those compounds and their overall effect will be addressed on a case-by-case basis in the site-specific risk assessment and discussed in the Uncertainty Section of that assessment.”*

- 21) **Appendix B, Section 1.2.1** – In the first paragraph, the second sentence refers to an “attachment”. Please explain what is being referenced or provide the attachment if it is missing.

Response: *The reference to “attachment” was changed to “see lists below” – referring to the screening criteria (TACO, USEPA ORNL, etc.) listed for each media.*

- 22) **Appendix B, Section 1.2.1** – Please explain the difference between the Section 1.2.1 screening criteria and the Worksheet #15 project action levels.

Response: *The screening concentrations are based on risk-based cleanup objectives developed by Illinois EPA (Illinois EPA, online August 2007) and risk-based concentrations developed by Oak Ridge National Laboratory (ORNL) and recommended by the U.S.*

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Environmental Protection Agency (USEPA). Worksheet #15 project action levels are the lower of the respective criteria (TACO criteria or USEPA ORNL concentrations).

- 23) **Appendix B, Section 1.2.1** – In the first bullet of the Screening Levels for Subsurface Soil section, TACO values are identified as screening levels. This reference should not be dated since the most current entry should be used. Proposed TACO amendments should also be considered for provision of additional and revised screening levels. TACO amendments are available on the internet at the following address:
(<http://www.ipcb.state.il.us/cool/external/CaseView2.asp?referer=coolsearch&case=R2009-009>; initial filing plus Agency addenda).
Response: *The first bullet of Screening Levels for Subsurface Soil in Appendix B, Section 1.2.1 was corrected to read: "Illinois EPA Tier 1 Soil Remediation Objectives for Residential Properties and amendments (Illinois EPA, online at <http://www.ipcb.state.il.us/SLR/IPCBandIEPAEnvironmentalRegulations-Title35.asp>) and a footnote was added to the COPC selection criteria list in the HHRA Work Plan and Worksheet #15 that states that the proposed TACO amendments to provisional and revised screening levels will be reviewed, and if finalized, will be included in the final risk assessment and COPC selection and can be found at (<http://www.ipcb.state.il.us/cool/external/CaseView2.asp?referer=coolsearch&case=R2009-009>).*
- 24) **Appendix B, Section 1.2.1** – On page B-5 at the top of the subject page, Bullets 2 through 6 list sources for the screening levels. None of the sources should be dated to assure that the most current values are utilized when the screening levels are finalized. Also, the third bullet on this page (fourth overall) should be removed. This source is no longer available. Finally, bullets #4 and #5 (#5 and #6 overall) can be combined. The screening level entry for the Agency-derived non-TACO chemicals must not be restrictive and should include values for all three receptors (residential, industrial/commercial, and construction worker).
Response: *These changes have been made on page B-5 of Appendix B, Section 1.2.1.*
- 25) **Appendix B, Section 1.2.1** – On page B-6, two bulleted references are presented identifying sources for screening levels for migration to groundwater concentrations. Dates should be removed and the ORNL Regional Screening Levels reference for Protection of Groundwater should be added.
Response: *These changes have been made on page B-6 of Appendix B, Section 1.2.1.*
- 26) **Appendix B, Section 1.2.1** – On page B-7, five bullets appear on this page presenting sources for groundwater screening levels. The fourth bullet should specify that Class I values will be used. The fifth bullet is ambiguous because the vapor intrusion reference presents several screening values which vary based on the desired risk level and soil attenuation factor.
Response: *On page B-7, Appendix B, Section 1.2.1, the dates have been removed from the groundwater screening levels. The fourth bullet was corrected to specify Class I values, and the fifth bullet was corrected to read: "USEPA Groundwater Generic Screening Levels for Evaluating the Vapor Intrusion to Indoor Air, Table 2c, (USEPA)."*
- 27) **Appendix B, Section 2.1** – This section concerns the conceptual site model and refers the reader to Figure 1. Figure 1 identifies overland runoff of surface soil as a release mechanism for this site. Contrary to earlier statements, this implies that surface contamination may be a concern at this site.
Response: *Runoff is not an concern at this site (see response to comment 2) and Figure 1 was corrected to reflect this.*
- 28) **Appendix B, Section 2.1.3** – This section addresses the potential receptors and exposure routes at Site #9. The second bullet in this section identifies the future occupational worker as a potential

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receptor but no concern is expressed for the current worker. Attention should be given to current indoor workers such as secretaries, office workers, and maintenance workers plus outdoor landscaping maintenance workers.

Response: Appendix B, Section 2.1.3 was corrected to include current workers and reads: "Maintenance/Occupational Workers – Potential receptors under future and current land use." This section was modified to include the Maintenance worker as well.

- 29) **Appendix B, Section 2.3** – The last sentence in Section 2.3 states that one-half the detection limit will be reported for results that are below the detection limit. The actual detection limit should be reported and the result designated as below detection by annotation.

Response: Appendix B, Section 2.3 was corrected and read: "Data values less than sample-specific detection limits will be reported as the detection limit and the result designated as below detection by annotation."

- 30) **Appendix B, Section 2.4.3** – This section places a condition on the evaluation of inhalation risk. The first paragraph of this section states that quantitative risk will be calculated only when a site concentration exceeds its corresponding USEPA Generic Inhalation SSL value. The Agency cannot agree with this approach.

The internet calculated generic inhalation SSL screening levels are only computed for the residential receptor. It is our experience that the construction worker receptor may have a lower screening level than the hypothetical resident. We recommend that the construction worker receptor screening levels be included. TACO provides a lookup table of screening levels for the construction worker. At this site, exposure to subsurface volatile contamination by a construction worker is a genuine possibility.

Response: The HHRA work plan was corrected to include the construction worker receptor screening levels.

- 31) **Appendix B, Section 5.0** – The last sentence of this section appears to be an author's note and should be revised or removed.

Response: The erroneous sentence in Appendix B, Section 5.0 was removed.

- 32) **Appendix B, Table 2** – Please explain the circumstances whereby direct contact (ingestion, dermal contact, and dust inhalation) to subsurface soil occurs for the residential and occupational worker receptors.

Response: A footnote was added to Table 2 to explain the circumstances for direct contact to subsurface soil – text similar to the text on page B-6 and B-14 will be used in the footnote – "...subsurface soil could be brought to the surface in a future excavation project..."

- 33) **Appendix B, Tables 3 and 4** – Section 2.1.3 suggests that the future occupational worker receptor should fit the industrial/commercial exposure regimen. Some of the Table 3 and 4, RME and CME, exposure parameters are inconsistent with this premise, e.g., exposure frequency of 24 and 12 days, RME and CME, respectively. This receptor needs to be more fully described and defined.

Response: The Maintenance/Occupational worker includes personnel working on the site handing out uniforms to recruits, restocking military uniforms/equipment, landscaping work, and completing paperwork. The exposure frequency was corrected to reflect this.

- 34) **Appendix B, Attachment 1** – Attachment 1 describes the development of a site-specific construction worker PEF using the Supplemental SSL approach. It appears the calculation has been adjusted for a 30 day exposure and a road segment area that corresponds to a square 47.5 acre site. Changing the size of the site requires a corresponding change of the "A_{site}" (site area) factor in the Q/C equation. Additionally, the need to adjust the F_d dispersion correction factor for

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averaging times of less than one year is triggered and cannot be 0.185, as stated. Finally, the "T" (total time) value reported in Attachment 1 corresponds to 30, eight hour days. It is unclear whether T should equal the time worked, as reported, or the entire work interval of six weeks (3.63E+06 seconds).

Response: *The attachment was corrected for the "A_{site}" (site area) factor in the Q/C equation and the the Fd dispersion correction factor based on the comment. T (total time) have been revised to equal 8.64x10+5, which equals the internal of 3600 sec/hr x 8hr/day x 30days/yr.*

- 35) **General Comment** - Both the body of the report and Appendix B contain citations to literature sources yet neither includes a reference section. Please add a reference section for each of these parts of the report.

Response: *References for the UFP SAP and Appendix B were/are included in Appendix F. The list of references was updated.*

Note changes were made to the document based on comments from the Navy Government Chemist. All changes have been highlighted or tracked in 'track change' mode to assist with the review process.

Worksheet 11 was also revised/changed according to the Navy Government Chemist comment that this investigation should be conducted as a Site Investigation.