WHITE FARM FIVE YEAR REVIEW DRAFT COMMENTS

Black font indicates initial EPA comments received 2-25-2014
Red font indicates initial USACE responses sent 3-11-2014
Green font indicates EPA reply to responses received 3-24-14
Blue font indicates current USACE responses to comments

Human Health Risk Assessor Comments

1. List of Acronyms (p. v). To be technically correct, "ug" should be changed to "µg."
USACE Response: Acronym list will be adjusted.
No reply necessary. Comment resolved.

2. Section 6.3 (p. 11). In this section, we noticed that the June 1990 Human Health Risk Assessment was not included as one of the documents reviewed. If the HHRA was inadvertently left off of this list, please include it. If it was not reviewed, it should be examined to determine whether the exposure parameters and toxicity values used at the time of the remedy are still valid.

Response: The document's conclusions and recommendations were reviewed as outlined in the RI and ROD. A cursory review of the document was performed, however due to the lack of exposure pathway and lack of groundwater concerns at the site, changes to toxicity values were not reevaluated. HHRA document will be added to the list of reviewed documents.

EPA Reply: The response to comments indicates that potential changes in toxicity values were not evaluated. Please refer to: http://www.epa.gov/superfund/cleanup/postconstruction/5yr.pdf. FAQ 24 of this EPA guidance on proper conduct of Superfund Five-Year Reviews affirms that it is necessary to evaluate potential changes in toxicity values, even in compounds that were not retained as Chemicals of Concern in the Record of Decision. This is to ensure that assumptions made at the time of the HHRA and ROD remain protective today, in light of possible new changes in toxicity values, exposure parameters, and risk assessment methodology. Following this very specific recommendation made in the EPA's guidance, please evaluate potential changes in toxicity values for chemicals initially identified at this site. We suggest creating a table comparing the toxicity values used in the 1990 HHRA for all of the Chemicals of Potential Concern evaluated in that document, along with today's current toxicity values.

Response: Will include evaluation of COPCs listed in the 1990 HHRA using the Region 3 RSL's for residential groundwater and industrial soil and toxicity values from the November 2013 RSL tables.

3. Table 2 (p. 14). In the column providing the 1999 chromium data, we noticed a qualifier, "Bu," which is undefined. Please define "Bu" in the table notes.
Response: Qualifier will be explained in footnotes.
No reply necessary. Comment resolved.

4. Table 2 (p. 14). The performance standard for lead in groundwater is listed as 50.0 µg/L. However, as correctly noted on page 19, the federal Maximum Contaminant Level for lead has changed to 15 µg/L. We suggest adding a footnote referencing the new, current ARAR, to Table 2.
Response: Footnote to be added to Table 2.
No reply necessary. Comment resolved.

5. Section 7.2.1 (p. 19). The first paragraph in this section describes the cleanup goals for soil, which were risk-based values. Please list the Chemicals of Concern in soil, along with their respective cleanup goals. We note that as long as the extent of contamination was limited to the site boundaries, the cap and protective cover eliminates direct contact with COCs in the surface soil. Similarly, the environmental covenant prohibits disturbance of the cap, which eliminates contact with COCs in subsurface soil. Therefore, by eliminating these exposure pathways, the remedy remains protective, even if the risk-based values used as the basis for the soil cleanup goals have changed since the time the remedy was selected.
Response: The soils COCs and cleanup goals will be listed.
No reply necessary. Comment resolved.

6. Section 7 .2.1 (p. 19). The second paragraph in this section describes the cleanup goals for groundwater. Please list the COCs in groundwater, along with the cleanup goals.
Response: The groundwater COCs and cleanup goals will be listed.
No reply necessary. Comment resolved.

7. Section 7.2.2 (pp. 19-20). The five-year review report is meant to be a transparent document to help readers understand potential impacts of new information, such as exposure parameters, toxicity values, risk assessment policies, etc. Often, a functioning remedy will remain protective even with many changes, because the remedy prevents exposure. However, changes should be clearly discussed for the benefit of the public.

Although page 19 states that benzene was the sole driver of groundwater risk and lead was the sole driver of risk from exposure to soil, several Chemicals of Potential Concern were first examined in the 1990 HHRA. These include metals such as arsenic, polycyclic aromatic hydrocarbons such as naphthalene and benzo(a)pyrene, benzene, toluene, ethylbenzene, xylenes, and phenol. The five-year review report should compare the concentrations of these COPCs with today's risk-based screening levels to determine if any additional compounds might be considered COCs today. Typically, Region 7 then creates a table showing the toxicity values for the COPCs at the time of the HHRA and the current values. Although changes in soil COCs based on updated toxicity values or exposure parameters likely will not impact the remedy since the exposure pathways are incomplete, additional constituents may need to be included in groundwater monitoring.

Response: Due to the lack of exposure pathway and lack of groundwater concerns at the site, any changes to the screening levels of potential COCs would not have an effect on the protectiveness of the remedy. No appreciable leaching or off-site transport of landfill contaminants to groundwater was identified during the RI/FS, and landfill wastes were determined to be non-hazardous wastes.

EPA Reply: The response to comments indicates that any changes in screening values would not have an impact on the protectiveness of the remedy. This may be true; however, additional analytes may need to be monitored to ensure protectiveness. As discussed above, it is necessary to evaluate potential changes in screening levels to ensure assumptions made at the time of the HHRA and ROD are still protective today.

Response: Will use screening levels from the Region 3 November 2013 RSL tables to re-evaluate analytes.

8. Section 7.2.2 (p. 20). A new livestock well is proposed outside and upgradient of the cap. Before concluding that this is still protective, we suggest considering whether this extraction could potentially have a draw-down effect, causing migration of the plume.
Response: Based on the limited use of the livestock well and lack of groundwater concerns at the site, potential draw-down at the well is not expected to affect the protectiveness of the remedy.
No reply necessary. Comment resolved.

9. Section 7.2.2 (p. 20). The last paragraph on page 20 indicates that lead risks are now evaluated using the Integrated Exposure Uptake Biokinetic Model, rather than by calculating a hazard index. This is true if children receptors are exposed to the site. However, here we would use the Adult Lead Methodology. Again, we agree that this change in methodology would not impact the protectiveness of the remedy since the soil is capped.

Response: Noted. No change necessary

EPA Reply: The response indicates that no changes are necessary. We believe the five-year review report should acknowledge the change in risk assessment methodology. That is, the Adult Lead Methodology should have been used to evaluate potential risks from exposure to lead by adult receptors, not the IEUBK model.

Response: Will make necessary methodology change to Adult Lead in lieu of IEUBK.

Ecological Risk Assessor Comments

10. Section 4.3 (p. 8). The paragraph under the bullets, third sentence, should read "non-detects" (not "none detects").
Response: Document will be updated.
No reply necessary. Comment resolved.

11. Section 6.4 (p. 11). The first sentence states that the U.S. Environmental Protection Agency and IDNR have agreed that a 10-year sampling frequency will be used to monitor wells at the White Farm Site. Please include the start date of that agreement in this sentence.
Response: Document will be updated with the date.
No reply necessary. Comment resolved.

Recommendations
The 1990 Final Revised Risk Assessment for White Farm Equipment found that there was a risk to ecological receptors at this site, both terrestrial and aquatic. The site is now capped; therefore a terrestrial risk is much lower. However, surface water samples in the wetland were recommended when surface water was standing. Therefore, the EPA ecological risk assessors recommend sampling surface water and sediment for metals including hexavalent chromium and VOCs in the wetland area, including sites WFE-S-1, 2, 3, 4, 5, 7, and 8. This can be done at the same time as the groundwater sampling, as long as there is standing surface water in the wetland area.

Response: If funding allows, collection of a sediment and surface water sample during the next sampling event could occur. Surface water runoff was addressed through the selected remedy via landfill cap and sedimentation basins, no evidence of erosion has been documented at the site. Lack of groundwater contaminant transport eliminates any further potential surface water contamination which may have originated at the site. No surface water or sediment collection was required in the EPA and IDNR approved O&M Plan for the site.

Hydrogeologist Comments

12. Section 8.0 states there will be no effects to protectiveness due to damage to wells WFE-5B and WFE-6A; however, on page 22 there is a statement which states the two damaged wells should be repaired to prevent contamination from entering the groundwater.
Response: Sentence to be changed to reflect the need for repair to prevent vandalism.
No reply necessary. Comment resolved.

13. Section 9.0 recommends fixing the above mentioned wells, but indicates they do not affect protectiveness. However, as stated on page 22 the potential for groundwater contamination is a concern.
Response: Sentence to be changed to reflect the need for repair to prevent vandalism.
No reply necessary. Comment resolved.

14. When looking at the boring logs, it is apparent well SA never encountered the clay unit. This was either due to its absence, or the failure to drill deep enough to encounter it. If there is an absence of clay, then the possibility exists that the geology was not properly investigated.

Response: Borehole log from WFE-5 in Appendix A of the ROD shows the confining layer was encountered at 49 feet below ground surface. The well completion log for WFE-5A in Appendix A of the ROD shows the well was placed with screen interval from 37.5 to 47.5 feet below ground surface with the bottom of the well at 49 feet below ground surface. The geology of the well completion log shows a silty gravel was encountered at the bottom of the well, consistent with the gravelly layers interspersed with the clay confining layer identified in the Borehole logs.

EPA Reply: Comment indicates that well WFE-5A does encounter the top of a clay unit, as indicated in the ROD. However, the November 9, 1989, Final Remedial Investigation report does not indicate this was the case. The well completion log for this well indicates a graded gravel is at the base of the borehole. The apparent discrepancy should be resolved.

Response: The Borehole Log associated with the WFE-5 well cluster (Appendix B in 1989 RI Report) indicates a silty gravel was encountered at a depth of 43.5 and clay was encountered at a depth of 49.5. The Well Completion Log for monitoring well WFE-5A shows the gravel pack extending to 49.5, which is the depth to the top of clay. The Well Completion Log does not show the clay layer at 49.5, but we believe that was just an omission on the log. Even if the well were not completed to the top of clay, the gravel lense below the well would be extremely narrow. The possibility of contaminant passing through this lense and going undetected by the well is extremely low. Therefore, we do not believe any issues exist with regards to this well.

15. The distance between wells SA and 6B is 700 feet. This is a rather large spacing between wells. It would not be unusual for contaminants to move between two wells spaced that far apart, particularly where the source areas are not uniformly spread throughout the landfill.

Response: Noted. The WFE 5 and 6 well clusters were installed based on soil and groundwater analysis during the RI/FS phase of the project. During this effort, groundwater samples were collected from 16 monitoring wells inside and around the landfill area. Samples were analyzed for selected indicator compounds. Based on sample results, it was concluded the lower confined aquifer was not impacted, and the landfill contaminants were not leaching to the groundwater or moving with groundwater offsite to any appreciable extent in the upper aquifer.

EPA Reply: indicates that no movement of contamination is occurring to an appreciable extent in the upper aquifer. Therefore, the existing monitoring wells are sufficient. However, since abandoned well WFE-1, slightly upgradient of the WFE-5 and 6 clusters, showed concentrations of metals, benzene, and some PAHs above acceptable drinking water standards (i.e., MCLs), we continue to believe there is a potential for wastes to move between the existing wells.

Response: The 1989 RI indicated WFE-1 was upgradient of WFE-6A although it appears to be closer to WFE-5A. The groundwater elevation at WFE-5A and WFE-6A were within a few hundredths of a foot, suggesting the groundwater flow is more in the westerly direction, or towards WFE-5A. WFE-1 was approximately 480-ft from the current location of WFE-5A. The only contaminants exceeding drinking water criteria in WFE-1 was fuel related (Benzene and Naphthalene). There were no metals concentrations above drinking water standards. Although each site is different, empirical data derived from multiple studies looking at hundreds of UST sites, indicate that due to biochemical and natural attenuation characteristics, BTEX plumes are typically relatively short. A combined four studies looking at 604 BTEX sites, including sites where USTs had leaked significant product, indicated that the median BTEX plume length was 132-ft. The same study showed that 90% of all plumes were below 319-ft long. At the White Farm site, WFE-1 was the only well showing BTEX contamination, indicating the contamination was fairly isolated. Based on typical BTEX plume behavior, and the relatively low 25 ug/L initial concentration of benzene, it is very unlikely the BTEX plume ever extended to the perimeter of the landfill. It is even more unlikely the plume would travel to the perimeter of the landfill and remain at that concentration 25 years after the initial reading. The initial 20 years of groundwater readings have demonstrated this to be the case. Therefore, we believe it is highly unlikely that waste has or will move between the existing wells and even less likely it would do so at concentrations exceeding MCLs.

16. Wells 7A and 7B are both side-gradient wells and thus add little value to the groundwater monitoring system.

Response: Noted. No change required.

EPA Reply: No response was given for the fact that wells WFE-7 and 7A were side gradient and as such, offer little information on potential contaminant movement.

Response: Agree. These wells could be abandoned. However, it would be more cost effective to abandon these at the same time the other wells on the site are abandoned. Therefore, we suggest holding off on that recommendation until the end of the 30 year post closure monitoring period.

17. Wells WFE-5B and WFE-6A have been damaged for at least 10 years. The last two five-year reviews recommended these wells be repaired, but that has not occurred and no rationale has been provided in the draft report. Since they make up 50% of the available monitoring wells, fixing them is a definite requirement to properly evaluate whether the remedy is protective.

Response: Groundwater contamination is not considered to be an issue at this site based on the sampling and waste characterization performed during the RI/FS phase prior to placement of the cap, as well as the 3 subsequent sampling events performed in 1999, 2004, and 2008 as part of the five-year reviews. Landfill cap remedy is still protective as infiltration has been minimized and off-site transport of surface contamination has been prevented with the cap.

18. Only collecting groundwater samples from a site every 1 0 years is inadequate to determine whether a remedy is effective and continues to be protective. At a minimum, groundwater monitoring should be conducted every 5 years to provide adequate information for the 5-year review report.

Response: Groundwater contamination is not considered to be an issue at this site based on the sampling and waste characterization performed during the RI/FS phase at the site. Per the results of the RI/FS and selected remedy, the EPA and IDNR agreed to a sampling frequency of 10 years under the O&M Plan if initial sampling performed in 1999 showed no parameter values over the Practical Quantitation Limits. All initial samples performed in 1999 were non-detect or below the Contract Required Quantitation Limit.

Question A - Is the remedy functioning as intended by the decision documents?
Based on the available information, we cannot provide a definitive answer to this question. First, no monitoring of the existing groundwater wells has been done since the last five-year review. Without monitoring data, it is not possible to answer this question. Additionally, out of the six monitoring wells, two (5B and 6A) are damaged and two (7A and7B) were not sampled in 2009 due to excessive water around them. Furthermore, as stated above, these wells are side gradient and add little value to understanding the potential groundwater flow of contaminants. So out of the six wells designated for monitoring potential groundwater contamination, only two (33%) are

usable, and one of these wells (SA) never encountered the confining layer and, as a result, monitoring results may be questionable.

Response: Groundwater network may not be optimal but is not essential because prior extensive monitoring indicated no groundwater threat at the site. Based on the RI/FS data and subsequent sampling in 1999, 2004, and 2008, in our judgment, groundwater is not a concern at this site. The landfill cap remedy remains protective as intended by the decision documents.

EPA Reply to responses for Comments 17, 18, and Question A: Whether or not contamination has been detected, there is still a need to periodically sample the wells due to the continuation of waste in place. Specifically, since abandoned well WFE-1 had contaminants exceeding the federal drinking water standards, contaminants may still be present above these levels. Only sampling will validate whether the remedy is protective. The COE validates their position by reminding EPA of an agreement with IDNR to sample only once every 10 years. We recommend that this position be revisited. A ten-year sampling frequency is insufficient to evaluate potential contaminant flow. Based solely on monitoring data collected approximately six years ago, inadequate information is presently available to definitively answer Question A for this 4th Five-Year Review. Thus, we suggest deferring the protectiveness statement for this site until adequate data delineating current groundwater concentrations are available. Another option would be to identify additional groundwater monitoring as a follow-up action to be completed before the next five-year review.

Response: The recommendation in the approved 1994 O&M plan to reduce frequency to every 10 years was based on the judgment of both IDNR and EPA that the metals and benzene concentrations of the waste in this landfill were relatively low and there was not a significant risk that leaching to groundwater would occur. With placement of the cap, the possibility of leaching is even further reduced. Twenty years of monitoring results has demonstrated the reasoning behind this judgment to be sound. USACE agrees with the 10-year monitoring frequency for this very low risk site and does not believe deferring protectiveness would be appropriate. However, the current five year review report does indicate that another round of samples should be collected as part of the next five year review in 2019.