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NAS SAUFLEY FIELD
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RESPONSE TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMENTS DATED OCTOBER 26, 2011 SITE INSPECTION REPORT SITE 3 PISTOL
RANGE NAS SAUFLEY FIELD FL
5/13/2014
TETRA TECH INC

F027

RESPONSES TO FDEP COMMENTS DATED OCTOBER 26, 2011
SITE INSPECTION REPORT, SITE 3 PISTOL RANGE, OUTLYING LANDING FIELD
SAUFLEY
NAS PENSACOLA

Comment 1: In the Executive Summary, page ES-2, in Section ES-4 Summary of Results, first paragraph, third sentence, the word "subsurface" should be replaced with "surface" as a soil depth interval of 0.5 to 2 feet bgs is being discussed.

Comment 1 Response: The word "subsurface" has been replaced with the word "surface" since the discussion is in regard to the surface soil.

Comment 2: I cannot resolve in my mind the discrepancy between the SPLP results and the results from the temporary well that was installed. The lead and antimony concentrations in the SPLP sample collected from PRSBCS-0.5/2.0 were 4,620 and 24.3 !lg/L, respectively. These concentrations would indicate that both lead and antimony are highly leachable and should be distributed across the vadose zone and that they would likely be detected in groundwater at elevated concentrations. However, the opposite turns out to be the case. Lead was not detected at elevated concentrations in soil sample PRSBCS-2.0-4.0 and neither lead nor antimony was not detected in groundwater at all. While the results of the SPLP and groundwater analyses are reported, nowhere in the report is the discrepancy between the results explained or hypotheses proposed to explain the data.

Comment 2 Response: The SPLP sample was collected from location PRSBC5 which exhibited the highest XRF lead result at the 0.5-2.0 foot interval. The SPLP results from this sample did indeed indicate a high "potential" for both lead and antimony to migrate from the soil into the surficial groundwater at the site. Based on the SPLP results, a temporary groundwater monitoring well was installed, developed, and subsequently sampled for lead and antimony. The laboratory results indicate that in this particular case neither lead nor antimony was detected in the groundwater.

The purpose of the SPLP sample is to inform the investigators if a particular contaminant may have the potential to reach site groundwater, but it does not confirm contaminants are actually in the groundwater. The proof is actually in the sample result itself. In nearly all instances at the site where lead was detected at a fairly high concentration in the 0 to 0.5 foot interval, the 0.5 to 2 or 2.0 to 4.0 foot interval had a much lower concentration of lead. For instance, the XRF lead concentrations in the 0 to 0.5 and 0.5 to 2 foot intervals at location PRSBC5 were 616 and 461 ppm, respectively; however, in the 2.0 to 4.0 interval, the XRF lead concentration dropped significantly to only 26 ppm. This leads us to believe that the lead concentrations in the soil were associated with the observance of lead bullets/bullet fragments at the site. No bullets/bullet fragments were observed at the site in depths greater than 2 feet bgs. Had an SPLP analysis been run on the sample collected from the 2.0 to 4.0 foot interval at PRSBC5, it would be anticipated the result would have been much different than it was from the 0.5 to 2.0 foot interval.

A similar situation occurred at the nearby Saufley Field Skeet Range where the XRF and FBL lead concentrations at a particular sample location in the 0.5 to 2 foot interval were 330 ppm and 441 mg/kg,

respectively. The lead SPLP concentration was 2,420 µg/L; however, the nearby permanent groundwater monitoring well exhibited a non-detect for lead.

The last sentence from the paragraph in Section 4.1.5 of the SI Report has been replaced with the following text:

“Even though the SPLP sample indicated a high potential for lead and antimony to have reached the groundwater at the site, the FBL results indicate this is not the case at this particular site. The high lead levels from both the XRF and the FBL appear to be associated with actual bullets/bullet fragments observed in the soil in depths from 0 to 2 feet bgs. However, no bullets/bullet fragments were observed at the site at depths greater than 2 feet bgs. Additionally, the XRF lead results from the soil samples collected at the 2 to 4 foot intervals were very low supporting the groundwater result that lead does not appear to be leaching through the soil.”

Additionally, the following text has been added at the end of the last paragraph in the Conclusions subsection of the Executive Summary:

“The high lead levels from both the XRF and the FBL appear to be associated with actual bullets/bullet fragments observed in the soil in depths from 0 to 2 feet bgs. However, no bullets/bullet fragments were observed at the site at depths greater than 2 feet bgs. Additionally, the XRF lead results from the soil samples collected at the 2 to 4 foot intervals were very low supporting the groundwater result that lead does not appear to be leaching through the soil.”

Comment 3: My conclusions from the report are as follows. The XRF and laboratory analytical data clearly indicate that the site has been impacted with some lead contamination from bullets. The impact has been small, with elevated lead concentrations detected in surface soil (almost all in the top six inches of soil) at concentrations above the Department's residential soil cleanup target level of 400 mg/kg in only five samples with the highest lead concentration in a laboratory sample was estimated at 558 mg/kg. The locations where lead was detected above its residential SCTL correspond to an area located at the toe of the berm or near a location where visible bullets were found during fieldwork. The average lead concentration across the site is well below the Department's residential SCTL (see Table 4-3) and would not necessarily indicate a need for remediation. Even with this being the case, the Department would recommend that some effort be made to remove bullets and bullet fragments from the site. Because of the sloughing of the face of the berm (Appendix B, Photograph 2), the Department would expect the bullets to be mainly located at the toe of the berm.

Comment 3 Response: Based on the Department's recommendation, a field activity was conducted in an effort to remove the bullets/bullet fragments from the site. As stated above, the majority of bullets were observed within the toe of the berm where the soil had sloughed from the face of the berm. A Field Report has been completed for this particular activity and was submitted to the Department for review.

As a result of the subsequent bullet removal field activities at the Saufley Field Site 3 Pistol Range, the Executive Summary of the SI Report has been updated to include the following new bullet in the Recommendations subsection:

- *“The bullets/bullet fragments observed at the site serve as a potential source of lead in soil; therefore, removal of the bullets/bullet fragments was completed.”*