10/31/07-00597

Reisch, Timothy A CIV NAVFAC MID ATLANTIC

From:	Barber.Joshua@epamail.epa.gov
Sent:	Wednesday, October 31, 2007 12:45 PM
To:	janna.staszak@ch2m.com; Burchette.John@epamail.epa.gov; kimberly.henderson@ch2m.com; kmdoran@deq.virginia.gov; Reisch, Timothy A CIV NAVFAC MID ATLANTIC
Cc:	Barber.Joshua@epamail.epa.gov
Subject:	Draft Technical Memorandum-Addendum to the Expanded Remedial Investigation/Human Health Risk Assessment/Ecological Risk Assessment for Site 5; St. Juliens Creek Annex
Attachments:	figure 3-9 from ERI.pdf

figure 3-9 from ERI.pdf (43 KB...

SJCA Partnering Team.

EPA has completed its review of the subject document and submits the following comments at this time:

General Comment

EPA recommends additional lines of evidence be provided to justify the risk management of the shallow groundwater at Site 5 with no further action, specifically for Aluminum and Manganese. While the evidence provided in the Addendum for these two inorganics is valid and accurate, it fails to highlight that they have the same target organs (Aluminum - Developmental, Neurological; Manganese - Central Nervous System). Due to this factor, additional supporting rationale should be provided to demonstrate a strong case for risk management of the shallow groundwater. Additional lines of evidence that should be considered include, but are not limited to:

- Historically, much of the area in and around Site 5 has been used for placement of dredge spoil material that reportedly originated from Blows Creek and the Southern Branch of the Elizabeth River. While the levels of Al and Mn (as well as several other inorganics) may be a result of the Waste/Burnt Soil area, they may also be attributable to the dredge fill material.

- The two monitoring wells located downgradient of the Waste/Burnt Soil area consistently contained the highest levels of Al and Mn. A statistical comparison of the subsurface soil detections in the proximity of these two wells, e.g. samples SB05, SB07, SB08, and SB20 found in the attached figure, could provide additional evidence that the levels of Al and Mn in the shallow groundwater may be related to natural soil conditions at the site.

- Similarly, a statistical comparison of the shallow groundwater detection levels from upgradient vs. downgradient monitoring wells may also provide evidence in support of risk management for the shallow groundwater at Site 5.

- The geographic location of Site 5 and its resultant attributes, e.g. close proximity to a wetland/tidal area, relatively flat topography and low groundwater migration velocity, potentially poor drinking water quality, etc., does not lend itself to future residential or industrial development and subsequent use of the shallow aquifer as a drinking water source.

The combination of one or more of these factors in addition to the other lines of evidence provided in the Addendum, e.g. removal of likely contaminant source, RME vs. CTE comparison and confidence level in the toxicity value (for Al), and maximum detection levels well below the background upper tolerance limit (UTL) (for Mn) should provide sufficient justification for the risk management of the shallow groundwater at Site 5.

Specific Comments

Page 3, Methodology, first paragraph. The sentence reads, "RME is the more conservative method of evaluating risk because it is based on the maximum detected concentrations; it is intended to assess exposures that are higher than average." This sentence is not completely true. RME is not based on the maximum detected concentration but instead is based on the 95% upper confidence limit on the mean. Please revise this sentence.

Page 4, Risk Management, first paragraphs. The sentence reads, "The RME risks are based on conservative assumptions using concentrations at one specific point to represent all of the drinking water that would be withdrawn from a well, rather than considering variations in concentrations that would actually pull groundwater. Therefore, CTE evaluation is more realistic because it accounts for potential variations in drinking water concentrations." These sentences are not exactly true for several reasons:

- The main reason why there is no variability in representative sampling concentrations is because point estimates for both RME and CTE are used rather than variable estimates. (E.g., Monte Carlo Simulation).

- Variability in sampling can be accomplished at one well if sampling is collected over a period of time. While some wells may have lower detected concentrations others could have higher detected concentrations.

- The CTE does not account for potential variations in sampling since RME and CTE are derived using the same data set. RME being the 95% upper confidence limit on the mean of the data and the CTE being the average concentration (mean) of the data.

Please revise these sentences since they are not accurate and do not reflect EPA's policies and/or guidance's.

Page 5, Risk Management, Aluminum and Arsenic. The report discusses background UTL comparisons for most of the listed metals however, background UTL comparisons are not discussed for aluminum and arsenic.
Please revise the Addendum to include language regarding background UTL comparisons for both Aluminum and Arsenic.

Page 5, Risk Management, Arsenic. Please include language to the effect that there is no discernible plume.

Attachment B

Table 7.1-RME, Adult Resident. The dermal risk results could not be reproduced.

Table 7.2-RME, Child Resident. The dermal risk results for beryllium could not be reproduced. It appears an incorrect dermal RfD was used.
The correct dermal RfD should be 1.4E-04.

(See attached file: figure 3-9 from ERI.pdf)

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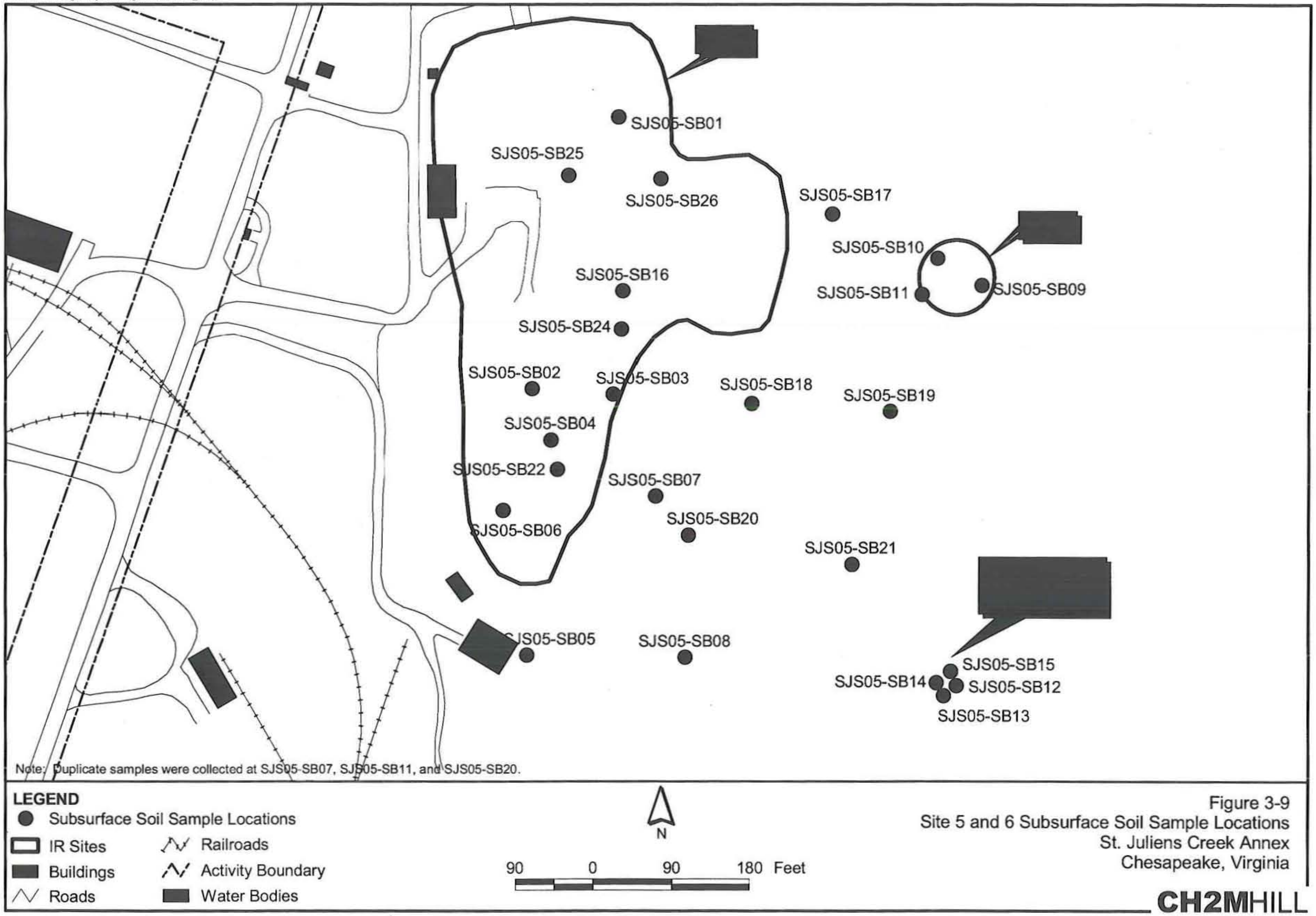

Figure 3-9
Site 5 and 6 Subsurface Soil Sample Locations
St. Juliens Creek Annex
Chesapeake, Virginia

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