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MCRD PARRIS ISLAND
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LETTER REGARDING U S EPA REGION IV COMMENTS ON DRAFT U S GEOLOGICAL
SURVEY WORK PLAN ADDENDUM FOR FIELD ACTIVITIES AT SITE 45 DRY CLEANING
FACILITY SPILL AREA MCRD PARRIS ISLAND SC

3/7/2008

U S EPA REGION IV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-8960

March 7, 2008

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4SD-FFB

Naval Air Station, JAX
Navy Facilities Engineering SE
Installation Restoration, SC IPT
Attn: Charles Cook
PO Box 30
North Ajax Street, Bldg 135
Jacksonville, FL 32212-0030

And

Commanding General
Marine Corps Recruit Depot
Natural Resources & Environmental Affairs
Attn: Heber Pittman
PO Box 5028
Parris Island, SC 29905-9001

SUBJ: EPA Review of the *Draft Work Plan Addendum for Field Activities at Site 45, Marine Corps Recruit Depot, Parris Island, South Carolina, FY 2008*, dated December 2007 (Draft Work Plan Addendum)

Dear Sirs:

EPA has reviewed the Site 45 USGS Draft Work Plan Addendum. The following comments were generated:

COMMENTS:

1. **Summary of Preliminary Findings from FY 2007, Page 2**

The first paragraph on Page 2 indicates three new monitoring wells were installed in the "SL" horizon on August 29, 2007. This section does not provide a definition of the "SL" horizon designation and the meaning is not clear. Also, the sample depths in feet below the ground surface were not provided for the temporary monitoring wells or membrane interface probe (MIP) screening locations that were discussed in this section. For clarity and completeness, revise the Draft Work Plan Addendum to address these issues.

2. **Influence of Storm Sewers on Ground Water Contamination and Figure 3, Page 5**

In a discussion with USGS, it was indicated that "other pipes" are located in the marsh area of concern. Please ensure that all pipes leading to the marsh are drawn in and included on the figure, even if it has been determined that today they are occluded.

Historically, specific waste streams (storm water, sanitary sewer, industrial) were not always clearly segregated at DoD sites and properly treated like they are today. It was not unusual for industrial wastes to be discharged into storm water drains and/or sanitary sewer lines. In the text, explain why there would or would not be reason to sample the sediments near these other pipes based upon the dates of release of source materials (several spills of unknown amounts over various times according to the RI), dates when specific waste streams became clearly segregated, what is known about the original use and construction of these other pipes, and what is known about the date upon which the pipes became occluded as relates to the date(s) of source material release/plume migration. Hopefully this will rule out any reason why the other pipe area would need to be investigated.

Without this additional justification for not taking samples, EPA feels the zone of potential contamination around these other pipes' discharge point(s) should also be sampled for surface water and sediment contamination. If as a result of addressing this comment additional samples are proposed, please also update Task 2, Figure 6, the Sampling Plan text, Table 3, and whatever else needs updating. (Also see other comments on surface water and sediment sampling for further requested modifications to these same portions of the Plan.)

3. **Other issues:, Page 6**

Petroleum hydrocarbons were detected in permanent and temporary monitoring wells in close proximity to the north-south trending storm sewer located immediately west of the former temporary lodging building. This section indicates the origin of the petroleum hydrocarbons is not known. It is possible the petroleum hydrocarbons were transported via the storm sewer from a location further upgradient of Site 45. It is currently not known what role, if any, the petroleum hydrocarbons play in the biodegradation of the dissolved chlorinated solvents such as being utilized as a carbon source during reductive dechlorination. Petroleum hydrocarbons utilized as the primary carbon source during reductive dechlorination could explain the lack of detections west of the storm sewer in the majority of the southern plume area. It is recommended that this issue be addressed in the summary report of the findings that will be supplied to the NavFacSouthEast (and the Partnering Team) in September 2008 as indicated in the *Task 5: Deliverables* section on Page 12 of the Draft Work Plan Addendum.

4. **Task 2: Collect and analyze sediment and water samples at the outfall to Ballast Creek., Pages 8 and 9**

Collection of Samples:

- a) Again, as appropriate, update the figure and the text in accordance with Comment # 2 above and all bullets in this comment. Modify the number and location of samples to

meet findings with regard to the "other pipes" on location. Any comments made here will also apply to any additional water and sediment samples proposed.

Figure 6 in the Work Plan indicates four surface water and four sediment samples will be collected within 6 feet of the end of the discharge pipe:

- b) While talking with USGS, a question was asked as to whether EPA would determine if the sample quantity was sufficient. As EPA understands this work plan, one goal is to determine the potential for contamination from storm-sewer discharge at the outfall to Ballast Creek. It is assumed that this sampling plan and sample locations are attempting to identify the worse case scenario, although the logic for sample location was not presented in detail (see other comments on sample numbers and locations.) The results of these worse case scenarios will be used in a screening process to determine if additional investigational sampling is needed. The number of samples required for other reasons (i.e. nature and extent delineation, risk assessment, etc. will be determined at the appropriate time if those steps become necessary.)
- c) An explanation of the anticipated distribution after leaving the outfall pipe has not been provided for the outfall area of this site. Additionally, it is unclear if it would be anticipated for source material to have found its way to these outfalls at the time of the spills or not. It is unclear if source material may be deposited and dispersed differently than dissolved contaminants from the groundwater as it was discharged from the pipes. From discussions with USGS regarding the rate at which water is released from these pipes, it appears that within 5 or 6 feet of the discharge pipe might be considered the "splash zone". Sampling surface water and sediments in this "splash zone" should not be the focus of this portion of the investigation. It may be appropriate to take samples at one or two locations near the discharge pipe to help validate a conceptual site model, but it will likely not be representative of the receiving body. Rather than focusing sampling of surface water and sediments in this locally disturbed area, investigators should place the majority of samples in more quiescent depositional locations away from and slightly down gradient of the discharge pipe(s) but beyond the suspected "splash zone". The locations may need to be determined while in the field at low tide. Please include a proposal for how many samples are needed when considering low tide likely deposition points. Having data available from a suitable reference location(s) greatly facilitates data interpretation especially for ecological risks assessments.
- d) This section indicates water samples will be collected by submerging and capping volatile organic analysis (VOA) vials. However, sampling methodology details were not presented here, nor in the Sampling Plan Section. Please review and incorporate appropriate procedures from the USEPA R4 Field Sampling Procedure # SESDPROC-201-R1 which can be found at <http://www.epa.gov/region4/sesd/fbqstp/Surfacewater-Sampling.pdf>. The procedure addresses special considerations for VOC s which should be incorporated into the Sampling Plan Section of this work plan. Also, VOA vials typically contain a small amount of acid which is present for sample preservation prior to analysis. The text in this section of the Draft Work Plan Addendum and in the Sampling Plan Section should be revised to clarify that special care will be taken to assure that the acid preservative present in the VOA vials is not displaced from the vials during

submersion and sample collection. Alternatively, the Draft Work Plan Addendum should discuss whether additional preservatives will be added to the VOA vials if the laboratory-supplied acid preservatives are flushed from the vials during sample collection activities and/or if unpreserved samples will be taken, and if so, whether the chosen lab is prepared to meet the required turn around times for unpreserved samples (holding time of only 7 days.)

- e) For sediment sampling, please review and incorporate appropriate procedures from the USEPA R4 Field Sampling Procedure # SESDPROC-200-R1 which can be found at <http://www.epa.gov/region4/sesd/fbqstp/Sediment-Sampling.pdf>. The procedure addresses special considerations for VOC s and/more specifically for low level contamination (< 200 ppb), as well as restrictions on tubing types to be used (for anything other than physical parameters or inorganics, plastic is not recommended) which should be incorporated into the text here and the Sampling Plan Section of this work plan. Again, please explain if preserved samples will be used and what precautions will be taken to ensure they are properly preserved, or what arrangements have been made with the lab if unpreserved samples are to be processed (holding time of 48 hours.)

Analysis of Samples:

- f) All sediment samples should be analyzed for grain size, total organic carbon, and percent moisture in addition to selected analytes. (See comment g below regarding additional analytes).
- g) The subject WP surface water/sediment samples will be analyzed only for VOC s. Full scan chemical analysis should be considered for at least two reasons. One, it is likely that contaminants other than VOC s were discharged to Ballast Creek via the sanitary and storm sewers at Parris Island. Historically, specific waste streams (storm water, sanitary sewer, industrial) were not always clearly segregated at DoD sites and properly treated like they are today. It was not unusual for industrial wastes to be discharged into storm water drains and/or sanitary sewer lines. Hence, it is very likely that contaminants other than VOC s were discharged into Ballast Creek from this outfall. The Work Plan itself reports contaminants (petroleum hydrocarbons) other than the Site 45-related chlorinated solvents in the water being discharged to Ballast Creek. Another reason for conducting full scan analysis is the upcoming Site 14 investigation of base outfalls at Parris Island. Conducting a more thorough analysis at this outfall now may provide information useful in scoping the Site 14 Outfalls and may avoid potentially duplicative efforts later. The degree to which you may wish to address Site 14 concerns at the same time may or may not require more than the planned sediment samples. Additionally, full scan analysis more closely meets the Work Plan's stated goal for the sediment sampling effort; i.e., "Collect and analyze sediment samples at the outfall to Ballast Creek to determine the potential for contamination from storm-sewer discharge." NOTE: If a full scan is not performed, and/or the "other pipes" are not investigated, and/or sufficient samples are not taken, then this area will not be considered to have been addressed when we go to scope Site 14 outfalls.

h) The WP is silent regarding how the surface water/sediment data will be interpreted. Presumably the results will be compared to EPA Region 4 human health and ecological screening values as well as State standards. Where Region 4 values do not exist, the Navy/MCRD should propose for approval an appropriate value (often EPA Region 3 values are referenced for ESV s where Region 4 values are not available.) Again, having data available from a suitable reference location(s) would facilitate interpretation of results in cases where no ESV s are available. Once the screening values have been determined, analytical methods and detection limits should be reviewed for appropriateness. These requirements and how the data are to be interpreted should be specified in the Sampling Plan Section.

5. **Task 3: Examine the potential for contamination of the deeper aquifer by downward movement of free-phase chlorinated solvents near the source area of the southern part of the ground-water contamination., Page 9, and Figure 7, Page 10:**

This section indicates wells will be installed in the "D" horizon, but the text does not describe or define the meaning of the "D" horizon designation. For completeness and clarity, revise the Draft Work Plan Addendum to address this issue.

Also, the location of these "D" horizon wells should be revisited and checked against 2008 temporary well data before placement of these permanent wells to ensure they are not going through the hottest portions of the plume and potential source materials (e.g. TW72 reportedly had high levels and is located very close to one of the proposed "D" wells.) Therefore, as stated in Permanent-well purpose, location, and installation, Page 12, the final location of these and other permanent wells should be decided by the Partnering Team after review of available data.

6. **Task 5: Deliverables, Page 12**

Please indicate in the text that the summary report of findings will be supplied to NavFacSouthEast "and the Partnering Team" in September 2008.

7. **Temporary-well purpose, installation, sampling, and abandonment, Page 12**

The text in this section indicates water samples collected from the temporary wells will be analyzed for chlorinated volatile organic compounds (VOC s). However, the planned sampling parameters presented in Table 3, Planned Sampling Parameters for FY 2008 at Site 45, of the Draft Work Plan Addendum, indicates VOC analysis for the 19 proposed temporary wells and does not specify chlorinated VOC analysis only as indicated on Page 12. Revise the Draft Work Plan Addendum to resolve this discrepancy.

8. **Permanent-well purpose, location, and installation, Page 12**

The first paragraph indicates the wells are shown on Figure 7, however, three are shown on Figure 7 and 1 on Figure 5. During a teleconference call held on Friday, February 29, 2008, the Navy indicated adding an additional fifth permanent well to the Site 45 field activities, which was not presented in the Draft Work Plan Addendum. Revise the Draft Work Plan Addendum to include the details of the fifth permanent well proposed location and to properly reference the well location Figures.

9. **Sampling Plan, Page 15**

The next to the last paragraph on Page 15 states "Investigation-derived wastewater (IDW) from contaminated wells will be containerized in an onsite drum. Disposal of the IDW will be the responsibility of Parris Island MCRD". Management of drill soil cuttings was not discussed in this section of the Draft Work Plan Addendum. To assure that management and proper disposition of contaminated soil cuttings is performed, revise the Draft Work Plan Addendum to address this issue.

Decontamination procedures of major equipment and sampling equipment were not discussed in this section. Revise the Draft Work Plan Addendum to include a discussion of the decontamination procedures and the management of decontamination water.

Additionally, sampling methods for surface water and sediments was not described here. Please do so and incorporate appropriate information as referenced in comment #4 above.

Finally, analytical methods were not described here. Please do so, even if just to reference Table 3.

Table 3: It is unclear what the "Outfall to Ballast Creek (2 events)" samples are, or where they are discussed in the text. Please explain. For the sediment samples, please modify as mentioned above, and be sure to include TOC, grain size, and percent moisture analysis. Also, it does not appear the surface water samples are included and addressed in the Table. Please do so. Additionally, for VOC analysis using SW846 8260: unfiltered samples, please clarify if you will be using revision b or c.

EPA appreciates the coordination efforts put forth by the Base and Navy, and looks forward to working together throughout this project. Please do not hesitate to contact me at (404) 562-9969 about these comments. EPA looks forward to the revised Work Plan Addendum.

Sincerely,



Lila Llamas
Senior RPM

cc: Meredith Amick, SCDHEC
Sommer Barker, SCDHEC
Mark Sladic, TtNUS ✓