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NAS SOUTH WEYMOUTH
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January 25, 2006

Project Number G00028

Mr. David Barney, RPM
Navy Caretaker Site Office
P.O. Box 169
South Weymouth, Massachusetts 02190-0001

Reference: CLEAN Contract No. N62467-03-D-0057
Contract Task Order (CTO) No. 30

Subject: Response to Comments on Navy's December 12, 2005 Response Package
Draft Soil and Groundwater Sampling Plan - Site 7, Former Sewage Treatment Plant
Naval Air Station South Weymouth, Weymouth, Massachusetts

Dear Mr. Barney:

Tetra Tech NUS, Inc. (TtNUS) has prepared responses to the comments received on the Navy's December 12, 2005 Response Package, Draft Soil and Groundwater Sampling Plan, Former Sewage Treatment Plant, at the Naval Air Station (NAS) South Weymouth in Weymouth, Massachusetts. Comments were received from the U.S. Environmental Protection Agency (EPA) on January 4, 2006, and from the Massachusetts Department of Environmental Protection (MADEP) on December 14, 2005. Through copy of this letter, the attached Responses to Comments are being provided to the recipients listed below.

Once we receive concurrence on the Responses, we will complete revision of and submit a draft final Soil and Groundwater Sampling Plan (Plan). As noted in the attached responses, we will schedule a preliminary mobilization in early February to redevelop MW-57D2 and perform inspections of the monitoring well network consistent with the Plan. We are ready to procure subcontractors for installation of the soil borings and laboratory analysis as soon as the Plan is approved. Any questions regarding this sampling plan should be directed to your attention at the Caretaker Site Office, (617) 753-4656. Please contact me at (978) 658-7899 if you have any questions.

Very truly yours,

Phoebe A. Call
Project Manager

PAC/rp

Attachment

c: ~~M. Leipert, Navy (w/attach. - 1)~~
Administrative Record c/o D. Barney (w/attach. - 1)
P. Whittemore, EPA (w/attach. - 3)
D. Chaffin, MADEP (w/attach. - 2)
P. Sortin, Abington (w/attach. - 1)
D. McCormack, Weymouth (w/attach. - 1)
M. Parsons, Rockland (w/attach. - 1)
Y. Walker, Naval Environmental Health Center (w/attach. - 2)
Town Libraries (w/attach. - 4)
Executive Director, South Shore Tri-town Development Corp. (w/attach. - 2)
J. Trepanowski/G. Glenn/S. Vetere, TtNUS (w/attach. - 1)
File G00028-3.2 (w/o attach.); G00028-2.1 (w/attach.)

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**NAVY RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
COMMENTS DATED JANUARY 4, 2006
NAVY DECEMBER 12, 2005 RESPONSE PACKAGE
DRAFT SOIL AND GROUNDWATER SAMPLING PLAN
FORMER SEWAGE TREATMENT PLANT
NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS**

General Comments:

General Comment 1. *Response acceptable.*

Response: Comment noted.

General Comment 2. *EPA General Comment 2 requested analysis of the groundwater sample to be collected from MW-57D2 for the full Target Analyte List (TAL). The rationale offered is that a full understanding of the presence of elevated arsenic requires supporting data for metals that are likely to control arsenic mobility (e.g., iron), and would be further corroborated by data for metals that tend to covary with As (e.g., Cu, Cr, Zn). Navy's Response takes the position that the objective of re-sampling MW-57D2 is very limited; i.e., to determine whether or not the previous detection of As is reproducible. Navy's Response also points out that there is only one existing As detection from the site, so that there is little basis for looking at As variation with various geochemical parameters. It is agreed that interpretation of As geochemistry for the site is limited by a lack of data, (with respect to both quality and quantity). Additionally, however, EPA's analysis of existing information suggests that the general limitations of the existing data, as well as several specific issues with respect to conditions at MW-57D2, argue for a more substantive reassessment. A general overview of some of the overarching limitations of the STP ground water data set are contained in EPA's letter to the Navy dated April 28, 2003 (e.g., EPA response to Navy response to EPA General Comment No. 11, and Specific comments 2, 5, 6, 7, etc.). EPA quickly reviewed this information as it bears on the situation at MW-57D2. Several significant issues were highlighted. Of primary importance is the fact that pH at MW-57D2 was reported on the order of 9.12 in the Phase II RI. Similarly, a pH of 10.24 was reported for MW-64D2. The reported Phase II RI pH values from all other wells varied between 5.61 and 7.32, more representative of 'typical' ambient conditions. As such, clearly there is something different about these wells, and well integrity problems may exist. Analytical results from samples collected from these wells, therefore, may not be representative of actual conditions in the aquifer. Therefore, at a minimum, an explanation is needed for the anomalous pH values prior to collecting additional samples (e.g., at MW-57D2). If the well seal is not functioning properly, or the well is otherwise determined to be compromised, a replacement well may be called for.*

Assuming well integrity issues are adequately addressed, the proposed analysis for As only will address the immediate objective of verifying (or refuting) the presence of As at a level that contributes to risk. However, should the analysis duplicate the previous result, and show that As at MW-57D2 is a genuine concern, interest in the geochemical conditions at this location may be rekindled. In this case, Navy may be directed to re-sample the well again, in order to obtain a full characterization. Navy should weigh the cost savings of the proposed analysis for only one element (As) against the potential added cost of re-sampling in the future, if called for.

A further recommendation, particularly if Navy is to proceed with the single-element analysis, is that As be analyzed by an alternative method with better detection limits than are given by ICP-OES (i.e., method 200.7). Alternatives are: graphite furnace atomic absorption (GFAA) spectroscopy (method 200.9), hydride generation flame atomic absorption (HGAA) spectroscopy (method 1632), and ICP-MS (method 200.8). These methods all are capable of yielding detection limits below 1 microgram per liter. Please note that EPA is withdrawing approval of method 200.7 (ICP-OES) for drinking-water analysis in January 2006. The motivation for this change in recommended analytical methods is manifest in the current discussion. Previous analyses for MW-57D2 were 5.7 J and 4.4 UJ (ND) micrograms per liter, near the nominal detection limit for ICP-OES. Therefore, one does not know whether As is present at a

concentration near this limit, or if the results simply reflect analytical uncertainty inherent in this method. More sensitive analytical methods will help to resolve this uncertainty.

As a final aside, EPA's assessment of existing data has highlighted a number of CSM issues which, if not immediately and directly relevant to the specific IRP goals for the STP site, may be of significance in relation to the parallel effort which is currently ongoing with respect to French Stream (i.e., "Basewide Watershed Study"). Our review suggests that activities at the STP site, (in addition to any CERCLA implications), have resulted in various impacts to the aquifer. For example, a number of lines of evidence suggest that salt storage has affected the aquifer (e.g., see conductivity data presented in Phase II RI), and elevated conductivity values extend at least as far as the down-gradient extent of the STP well network (e.g., MW-57). Similarly, ORP data suggest site-related impacts with the lowest values co-located with the former sludge-drying beds (e.g., MW-65). Since the STP site is up-gradient to French Stream, it would appear plausible that the aquifer impacts related to the site may contribute to some degree to degradation in French Stream. In this context, it is unfortunate that the highly-focused STP follow-up activities, as proposed, in conjunction with the limited previous RI/FS work, will not likely shed any significant new light onto these issues. As such, the Navy should anticipate a greater level of effort in the "Basewide Watershed Study" than current work plans call for. Further discussions are needed in that context.

Response: To address the issue of high pH in MW-57D2, and the potential that the integrity of the well may have been compromised, the Navy recommends performing well inspections prior to performing the field investigation. During this mobilization, which will be scheduled as soon as possible, the Navy will also re-develop MW-57D2, which will improve the quality of the field measurements (pH along with other water quality parameters) and the groundwater sample (to be collected during a separate mobilization) by helping to minimize turbidity in groundwater extracted from the well. The synoptic water level measurement round and sampling of MW-57D2 would continue under the existing schedule.

In response to the EPA comment regarding expanded groundwater sampling analyses, the Navy agrees to analyze the groundwater samples collected from MW-57D2 for the full TAL for metals. EPA Method 6010B will be used for all metals except arsenic; for arsenic, EPA Method 6020B will be used, as it is capable of achieving a 0.2 µg/L reporting limit for arsenic. The analysis of groundwater samples for other geochemical parameters (from this or other on-site wells) will be revisited, if necessary, during the pre-design investigation.

Section 3.4 of the Soil and Groundwater Sampling Plan will be revised to reflect the above changes.

Issues associated with French Stream are being addressed in the Watershed Evaluation portion of the Basewide Assessment Work Plan which is currently in progress. The STP field investigation has been intentionally focused on the current objectives, so that the schedule for the Feasibility Study can be met.

General Comment 3. *Response acceptable.*

R sponse: Comment noted.

General comment 4. *Response acceptable.*

Response: Comment noted.

General Comment 5. *The comment requested clarification on the detection limits to ensure that they will meet DQOs (e.g., lower than conservative human health and ecological benchmarks). The response indicates that Section 3 of the Plan will be revised to include practical quantitation limits and action limits. This response is acceptable. The detection limits in the example tables generally appear to be adequately low; however, please clarify how the DQLs were established. Was the DQL for each chemical supposed to be the lowest of the available values between EPA Region IV benchmarks, ECO SSLs, and PRGs? If this is the case, the lowest values were not used for all chemicals (e.g. the lowest ECO SSL for*

dieldrin is lower than EPA Region IV value, which was selected as the DQL). Further, please explain the origin of "PRGs" used as the basis for several of the DQLs.

Response: The DQL should represent the lowest of the EPA Region IV benchmarks, ECO SSLs, and PRGs. The tables will be revised to reflect the correct DQL.

PRGs are the human health risk-based EPA Region IX Preliminary Remediation Goals, with the values for non-carcinogens adjusted to correspond to hazard quotients of 0.1. For groundwater, the PRGs for tap water are used. For soils, the PRGs for residential soil contact are used.

General Comment 6. *This comment referred to the potential of pesticides to leach to groundwater. The comment recommended that, if TCLP or another method were to be employed, that data to support such methods could also be collected as part of this mobilization. The response explains that the pesticide/groundwater issue is not within the scope of this investigation but can be addressed in the Remedial Design phase. The response is acceptable.*

Response: Comment noted.

General Comment 7. *Please clarify the approach and specific pre-remedial steps/methods to be employed (e.g., PDI) to fully delineate COCs which have already been identified at the site in addition to those potentially identified in the former sludge drying beds.*

Response: The Navy intends to perform a pre-design investigation (PDI) prior to the design and implementation of remedial actions at the Former Sewage Treatment Plant site. The primary objective of the PDI will be to further delineate, through the collection of soil or sediment samples, the lateral extent of contamination present around sample locations where contaminant levels were observed to exceed the PRGs developed for the FS.

In light of the change in risk assumptions discussed during the April 2005 meeting at NAS South Weymouth, the Navy will re-evaluate the PRG development for the former STP. The next revision of the FS will address PRG calculations and compare the potentially modified set of PRGs to field sampling data (including the data collected from the former sludge drying beds), which will in turn define a more precise scope for the PDI.

Several other issues have been discussed during the FS review and comment process, the resolution of which will also be included in the PDI objectives, as necessary. These include verification of the presence of PCBs in surface water at the site and sampling MW-33 for the presence of pesticides. Other tasks may be included in the scope of the PDI if outstanding issues related to the extent of contaminated media exist that would impact the ability to properly design the remedial action.

Specific Comments:

All Specific Comments responses accepted.

**NAVY RESPONSES TO MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL
PROTECTION (MADEP) COMMENTS DATED DECEMBER 14, 2005
NAVY DECEMBER 12, 2005 RESPONSE PACKAGE
DRAFT SOIL AND GROUNDWATER SAMPLING PLAN
FORMER SEWAGE TREATMENT PLANT
NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS**

Comment 1. *The STP soil samples should be analyzed for TCL herbicides and Pramitol because the site history indicates there is significant potential for a release of herbicides to exist at the site and because the RTC was not sufficient to demonstrate that herbicides were not released at the STP.*

The site history indicates there is sufficient reason to suspect that herbicides might have been released at the STP: (1) records (e.g., documents related to RIA 2C) and observations of "weed killer" containers at several sites demonstrate that herbicides were used on the base, (2) elevated concentrations of arsenic in STP sediment might be attributable to herbicides, (3) application and spillage of herbicides is consistent with the operation and maintenance of a sewage treatment plant, and (4) the sludge that was stored and dewatered under the canopy could have contained herbicides disposed to any of the drains that were directly connected to the STP.

The RTC was not sufficient to demonstrate that herbicides were not released at the STP because: (1) the lack of herbicides analyses in previous site investigations does not demonstrate that herbicides were not released at the STP, (2) the exclusion of herbicides from the "routine chemical analyses" and "regular analytical suite" does not demonstrate that herbicides were not released at the STP, (3) the evaluation of herbicides at RIA 2C does not demonstrate that herbicides were not released at the STP, (4) the absence of light under the canopy does not demonstrate that herbicides were not released from the sludge stored and dewatered under the canopy, and (5) the lack of "evidence" (written records?) indicating that herbicides were used at the STP does not demonstrate that herbicides were not released at the STP.

Response: Navy does not agree that "the site history indicates there is significant potential for a release of herbicides to exist at the site." However, in the interest of expediting completion of the planned field program and the final Feasibility Study, Navy agrees to perform analysis of soil samples for TCL herbicides and Pramitol.

Table 3-1 of the Soil and Groundwater Sampling Plan will be revised to include 12 soil samples for TCL Herbicides (SW846, 8151A) and Pramitol. The analytical method for Pramitol will be consistent with prior soil analyses for the Base and will also be confirmed with a commercial analytical laboratory. Table 3-2 and Table 3-3 will be revised to include information applicable to soil analysis for TCL herbicides and Pramitol.

The tables appended to the December 12, 2005 responses to EPA comments (see response to General Comment 5) will be expanded to include the applicable information for the soil herbicide and Pramitol analyses.

Comment 2. *RTC 2: The response is inadequate to support the exclusion of PAHs delineation from the pre-design investigation (PDI) because: (1) the results from one sample (FSS-4) are insufficient to characterize the magnitude and extent of the PAHs hotspot that may exist in the vicinity of sample location FSS-4, and (2) the cited PRGs were developed for a recreational scenario; lower concentrations should have been derived to address an unrestricted use scenario (refer to 9th paragraph of April 11, 2005 meeting notes).*

Response: In light of the discussion about risk assessment assumptions (April 2005 meeting), as agreed at that meeting, the Navy will re-evaluate the development of PRGs for the Feasibility Study to include the proper assumptions for the future resident. This re-evaluation will include the data collected during this

field event. Based on the PRGs developed from the augmented data set, using the modified risk assumptions, the scope of the PDI may change based on a comparison of a potentially different set of PRGs to soil/sediment/groundwater sampling results. The scope of the PDI will be addressed in the next revision of the FS, when a clear delineation of the sampling locations that exceed PRGs is available.