

**Corey -- NUS**

**From:** Rich, Corey -- NUS  
**Sent:** Friday, November 10, 2006 2:11 PM  
**To:** 'Keckler.Kymberlee@epamail.epa.gov'  
**Cc:** 'Jurka, Val CIV NAVFAC, Ev1'; richard.conant@navy.mil; Mark Lewis (mark.lewis@po.state.ct.us); Jennifer Hayes Stump (jstump@gfnet.com)  
**Subject:** Round 1 Groundwater Monitoring Report for Sites 3 and 7 - Responses to Comments  
**Attachments:** RTCEPA111006.doc

Kymberlee,

The attached file contains responses to EPA's October 16, 2006 comments on the Round 1 Groundwater Monitoring Report for Sites 3 and 7. TtNUS plans to update the report per the response-to-comment document and reissue it next Tuesday (11/14/06). Let me know if you have any questions/comments prior to next Tuesday.



RTCEPA111006.doc  
(48 KB)

Regards,  
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**RESPONSES TO EPA REGION I's OCTOBER 16, 2006 COMMENTS  
ON THE DRAFT ROUND 1 GROUNDWATER MONITORING REPORT FOR SITES 3 AND 7  
NAVAL SUBMARINE BASE – NEW LONDON, GROTON, CONNECTICUT**

**NOVEMBER 10, 2006**

**GENERAL COMMENTS – Cover Letter**

**Comment No. 1:**

The Round 1 Groundwater Monitoring Report for Sites 3 and 7 generally follows the procedures outlined in the GMP, with the exceptions noted below. With respect to analytical parameters, it appears that the appropriate monitoring wells were sampled according to the GMP. Several of the samples from monitoring wells at Site 7 were analyzed for different parameters such as SVOCs and PAHs. This is in accordance with the GMP, and Table 3-1 and Table 3-2 did a satisfactory job of conveying the differences in analytical samples.

**Response:**

Comment noted.

**Comment No. 2**

Results from Round 1 overall are encouraging with respect to recovery of site groundwater quality. Few VOCs were detected, and only two exceedances were found: TCE at 5.7 ppb at 2DMW16D and at 5.1 ppb at 3MW16D. Both results are close to the MCL of 5 ppb. Previous characterization of Sites 3 and 7, as reported in the 2001 Basewide Groundwater OU RI Report, similarly indicated scattered, relatively low-level exceedances of water quality standards. Round 1 results are consistent with the conceptual model advanced in the RI (i.e., that the sites reflect small, sporadic, historical releases of contaminants). A location that exhibited some of the highest VOC concentrations in the earlier sampling is 2DMW29S where the RI reports TCE at 5.47 ppb and vinyl chloride at 31.3 ppb. In Round 1, TCE was below the detection limit of 0.5 ppb, and VC was detected at 1.7 ppb, suggesting that natural attenuation may be reducing CVOC concentrations at this location.

**Response:**

Agree. The Navy also believes the initial results are encouraging regarding recovery of site groundwater quality. Additional rounds of monitoring will help to confirm the conceptual model and contaminant trends in the groundwater.

**Comment No. 3**

Several of the new monitoring wells (3MW15I, 7MW3I, and 7MW12I) encountered high turbidity (240 NTU, >1000 NTU, and >1000 NTU, respectively) at the end of the purge. The boring log for 3MW15I describes principally sands in the screened interval; the initial development brought turbidity down to 8 NTU. Redevelopment may be required to attain lower turbidity in sampling this well. The boring logs for wells 7MW3I and 7MW12I show silt and clay in the screened intervals, and it appears that the 0.010-inch screen slot and No. 2 sand filter pack are too large to exclude fines from the wells. Re-installation of these wells is encouraged, with special attention to well construction for a fine-grained medium.

**Response:**

Agree with clarification. Turbidity levels during Round 1 were higher than anticipated in newly installed wells 3MW15I, 7MW3I, and 7MW12I. Turbidity levels can be high in newly installed wells during the first few sampling events. The Navy will redevelop the wells during a subsequent

round to see if turbidity levels can be reduced. If turbidity levels continue to be high, the Navy will evaluate other options and provide recommendations in the Year 1 Annual Report.

## **SPECIFIC COMMENTS – ATTACHMENT A**

### **Comment No. 1: p. 2-3, §2.5**

According to this section, monitoring wells were purged until water quality parameters stabilized to a set of listed limits. However, the listed limits are not the same as those defined in EPA Region I's Low-Flow Purging and Sampling Procedure found in Appendix II-C of the GMP. Please explain this discrepancy.

#### **Response:**

Agree with clarification. The parameters and limits identified in Section 2.5 were identified in the Work Plan for Remedial Action at Sites 3 and 7 (TtNUS, March 2006). The stabilization parameters and limits are consistent with Tetra Tech NUS, Inc. SOP SA-1.1 which was provided in the Work Plan. The limits for turbidity, ORP, and DO are similar to the parameters identified in EPA Region I Low Stress SOP GW 0001. The limits for the remaining water quality parameters (pH, specific conductance and temperature), although slightly different, are still technically sound and satisfy the requirements for obtaining representative groundwater samples. Therefore, it is not believed that this is a significant discrepancy that would impact the quality of the data.

### **Comment No. 2: p. 2-3, §2.5**

The third paragraph states, "Because of slow recovery, one round of water quality measurements was taken from the well and then groundwater sampling activities were begun," referring to monitoring well 7MW05D. According to the GMP, page II-A-1-2, §1.3, purging may be stopped if water quality parameters do not stabilize within 4 hours. Please define "slow recovery" in more detail.

#### **Response:**

Agree with clarification. According to the monitoring well development record for 7MW05D, the well was developed on May 4, 2006 and during development at a rate of 2 gallons per minute, the monitoring well went dry after 5 minutes. The field crew waited approximately 33 minutes before starting the pump again, and the well went dry in 1 minute. Well development was suspended at that point. The well was allowed to recover for 12 days (May 16, 2006), but as of that date, the water level had not fully recharged to the static water level obtained prior to development. In addition, a dedicated pump was installed in the well and the water level was only slightly above the pump intake. Based on this information, a decision was made by the field geologist to not follow EPA Region I Low Stress SOP GW 0001, Section 1.3 in order to allow collection of the groundwater sample from this well. Based on the demonstrated groundwater recovery rate, the well would have been pumped dry or the water level would have gone below the pump intake prior to completing purging and sampling. If recovery continues to be a problem with this well, the Navy will evaluate other options and provide recommendations in the Year 1 Annual Report.

The following text will be added to the subject paragraph:

"...May 4, 2006. Because of the slow recovery and the fact that a dedicated pump was installed in the well and the water level was only slightly above the pump intake, a decision was made by the field geologist to not follow the standard purging process in order to allow collection of the groundwater sample from this well. Based on the demonstrated groundwater recovery rate, the well would have been pumped dry or the water level would have gone below the pump intake prior to completing purging and sampling."

**Comment No. 3: p. 2-3, §2.5**

This section states that groundwater samples were collected following purging. According to the GMP, page II-A-1-2, §1.3, water levels are to be measured using an M-Scope before obtaining samples. Provide either a statement that this was done or a description of why it was omitted.

**Response:**

Water levels were taken and recorded during well purging and they are provided in Appendix A-5 of the report. The following sentence will be added to second paragraph of Section 2.5 on p. 2-3:

"...the pump intake. Water level measurements were taken in each well prior to purging and throughout the purging process (see Appendix A-5). Groundwater quality parameters..."

**Comment No. 4: p. 2-3, §2.5**

The fifth paragraph describes a diesel fuel spill that occurred while field crews were sampling monitoring well 7MW12I. The text indicates that fuel entered the well before collection of the sample. Table 3-2 contains sample results for this monitoring well, so please provide additional details regarding the spill. Was the sample collected before fuel entered the well? If not, how was the fuel removed from the monitoring well so as to produce accurate sample results?

**Response:**

The following text will be added to the last paragraph of Section 2.5 on p. 2-4 to better explain the approach that was taken:

"They used absorbent pads to soak up the spilled fuel at the surface. Photographs taken during this event are provided in Appendix D. Sampling activities were suspended at this well until May 23, 2006. Upon return to the well, water in the protective road box was evacuated prior to removing the well cap. The well was subsequently purged and sampled as called for in the work plan. The sample from this well was analyzed for VOCs and SVOCs. No additional efforts were made to decontaminate the interior of the well until the Round 1 results were available to determine if additional efforts were required."

**Comment No. 5: p. 3-2, §3.0**

Under the seventh bullet point listing chemicals of concern that were analyzed, hexachlorobenzene is associated with Sites 3 and 7. Additionally, according to the GMP, hexachlorobenzene is to be analyzed at both Site 3 and Site 7. However, this is not reflected in Table 3-1. There is no record that hexachlorobenzene was analyzed in any of the samples from monitoring wells at Site 3. Please explain this discrepancy.

**Response:**

The groundwater sampling/analytical program was identified in the Work Plan for Remedial Action at Sites 3 and 7 (TtNUS, March 2006). Hexachlorobenzene was identified as a COC for Site 7 groundwater only during the RI/FS and ROD; however, the COC was identified in Site 7 monitoring well 7MW9S which falls within the boundary of Site 3. Therefore, hexachlorobenzene was listed as a COC for Sites 3 and 7 which contributed to the EPA's misunderstanding. Following the Work Plan, samples from six Site 7 monitoring wells were analyzed for the COC (see table on p. 3-1). Hexachlorobenzene was not detected above the detection limit of 1 µg/L in any of the samples.

**Comment No. 6:** Figure 3-1

The figure shows a detection of TCE at 2DMW16S at 5.7 ppb, while Table 3-1 shows this detection at 2DMW16D. Please check for consistency.

**Response:**

Agree. Figure 3-1 is incorrect. The figure will be revised to correctly show the result for 2DMW16D.

October 16, 2006

Commanding Officer  
NAVFAC Mid-Atlantic  
ATTN: Steve Martin  
9742 Maryland Avenue  
Norfolk, VA 23511-3095

Re: Round 1 Groundwater Monitoring Report for Sites 3 and 7

Dear Mr. Martin:

EPA reviewed the *Round 1 Groundwater Monitoring Report For Sites 3 And 7, Naval Submarine Base - New London, Groton, Connecticut*, dated July 2006 in light of the *Operation and Maintenance Manual for Installation Restoration Program at Naval Submarine Base New London, Groton, Connecticut, Volume II – Groundwater Monitoring Plan*, dated January 2006, hereafter referred to as the GMP. Detailed comments are provided in Attachment A.

The Round 1 Groundwater Monitoring Report for Sites 3 and 7, generally follows the procedures outlined in the GMP, with the exceptions noted below. With respect to analytical parameters, it appears that the appropriate monitoring wells were sampled according to the GMP. Several of the samples from monitoring wells at Site 7 were analyzed for different parameters such as SVOCs and PAHs. This is in accordance with the GMP, and Table 3-1 and Table 3-2 did a satisfactory job of conveying the differences in analytical samples.

Results from Round 1 overall are encouraging with respect to recovery of site groundwater quality. Few VOCs were detected, and only two exceedances were found: TCE at 5.7 ppb at 2DMW16D and at 5.1 ppb at 3MW16D. Both results are close to the MCL of 5 ppb. Previous characterization of Sites 3 and 7, as reported in the 2001 Basewide Groundwater OU RI Report, similarly indicated scattered, relatively low-level exceedances of water quality standards. Round 1 results are consistent with the conceptual model advanced in the RI (*i.e.*, that the sites reflect small, sporadic, historical releases of contaminants). A location that exhibited some of the highest VOC concentrations in the earlier sampling is 2DMW29S where the RI reports TCE at 5.47 ppb and vinyl chloride at 31.3 ppb. In Round 1, TCE was below the detection limit of 0.5 ppb, and VC was detected at 1.7 ppb, suggesting that natural attenuation may be reducing CVOC concentrations at this location.

Several of the new monitoring wells (3MW15I, 7MW3I, and 7MW12I) encountered high turbidity (240 NTU, >1000 NTU, and >1000 NTU, respectively) at the end of the purge. The boring log for 3MW15I describes principally sands in the screened interval; the initial development brought turbidity down to 8 NTU. Redevelopment may be required to attain lower turbidity in sampling this well. The boring logs for wells 7MW3I and 7MW12I show silt and

clay in the screened intervals, and it appears that the 0.010-inch screen slot and No. 2 sand filter pack are too large to exclude fines from the wells. Re-installation of these wells is encouraged, with special attention to well construction for a fine-grained medium.

I look forward to working with you and the Connecticut Department of Environmental Protection to protect the groundwater resources of the Naval Submarine Base. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

Kymerlee Keckler, Remedial Project Manager  
Federal Facilities Superfund Section

Attachment

cc: Mark Lewis, CTDEP, Hartford, CT  
Dick Conant, NSBNL, Groton, CT  
Jennifer Stump, Gannett Fleming, Harrisburg, PA

## ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. 2-3, §2.5	According to this section, monitoring wells were purged until water quality parameters stabilized to a set of listed limits. However, the listed limits are not the same as those defined in EPA Region I's Low-Flow Purging and Sampling Procedure found in Appendix II-C of the GMP. Please explain this discrepancy.
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