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U S NAVY RESPONSES TO U S EPA COMMENTS ON CONCEPTUAL SAMPLING PLAN, LONG TERM MONITORING PLAN OLD FIRE FIGHTER TRAINING AREA NS NEWPORT RI
4/2/2013
U S NAVY

NAVY RESPONSES TO
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)
COMMENTS DATED APRIL 2, 2012
CONCEPTUAL SAMPLING PLAN, LONG0TERM MONITORING PLAN
OLD FIRE-FIGHTING TRAINING AREA NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Navy responses to the EPA comments dated April 2, 2012 on the Conceptual Sampling Plan, Long Term Monitoring Plan, Site 9 Old Fire Fighting Training Area, Newport, RI are presented below. The EPA comments are presented first (in italics) followed by Navy's responses. Note that these responses have been incorporated in the Long Term Management Plan and the Sampling and Analysis Plan, which accompany these responses and replaces the subject document.

General Comments

1. ***Comment:*** *Groundwater sampling should be conducted at high tide to identify upgradient impacts owing to high tide.*

Response: It is agreed that Groundwater sampling should be conducted at high tide to identify any impacts that high tide might have on the groundwater upgradient of the Site.

2. ***Comment****: Please identify any seasonal differences in groundwater levels that need to be considered when scheduling the monitoring events. It is likely that the greatest upgradient impacts from tidal influences would occur during low water levels in late summer or early fall.*

Response: It is agreed that the tide could have a greater influence on the upgradient groundwater monitoring wells during low water levels; therefore, semi-annual groundwater monitoring events will be scheduled during the spring and fall.

3. ***Comment:*** *EPA notes that the groundwater contours presented are based on 2006 data. Please edit this Conceptual Sampling Plan or the Long-Term Monitoring Plan to evaluate the impact on groundwater flow and elevations owing to the fitness center building and foundation as well as the new pavement constructed throughout this site. EPA expects that significant changes may result as compared to the 2006 groundwater contours.*

Response: Geologic and hydrogeologic conditions at the OFFTA Site have been determined from data collected during previous site investigations such as the Remedial Investigation (Tetra Tech, 2001), the Source Area Removal Investigation (B&R Environmental, 1997), the Soil Predesign Investigation (Tetra Tech 2005a) & Addendum (Tetra Tech, 2005b), and the Focused Site Investigation for SWOS (2006).

Data collected from these investigations determined that the site surficial deposits consist of native soil and fill material which range in thickness from approximately 6 feet in the eastern portion of the island to about 27 feet in western portions of the island. The groundwater surface occurs within the overburden and the bedrock at the OFFTA Site at a depth of 4 to 9 feet below ground surface and groundwater flows from the site (and from any potential contaminant source areas at the site) toward Coasters Harbor to the north and east, and toward Narragansett Bay, located to the northwest. Based on the January 2006 synoptic round of water levels collected during high tide, the horizontal hydraulic gradient at the site ranges from 0.0048 ft/ft in the north to 0.0086 ft/ft in the northwest. A tidal influence study conducted for this site indicated that both the overburden and bedrock aquifers are influenced by the tides in areas along the shoreline, but this influence does not extend beyond the shoreline.

The construction of the Katy Field Parking lot (North of Taylor drive will represent an increase in impervious area that will likely reduce recharge in this area and therefore could decrease the horizontal hydraulic gradient in this area, however, it would not significantly alter the overall groundwater flow pattern since the adjacent Coasters Harbor would act as a relatively constant elevation [mean high water is 4.22 ft and mean low water is 0.76 ft (USN MLW Datum)] and upgradient groundwater would still be migrating toward Coasters Harbor.

South of Taylor Drive, the remedy in front of the SWOS building involves the placement of a geogrid 6 inches under the ground surface and this would not have any long term hydrologic effects.

The future fitness center building will be constructed on a location that was formerly tennis courts. The future building, similar to the former tennis courts, would be relatively impermeable; therefore, recharge from this area would not change significantly. Also, the foundation of the future fitness center will be constructed on piles so that there is no significant impediment to horizontal groundwater flow due to the construction of this new building. The runoff from the roof of the building will be routed to an underground infiltration system, along the south wall of the future fitness center. Since this is upgradient, it would have the effect of creating a local ephemeral groundwater mound that would have a tendency to create a steeper gradient toward the site, making a flow reversal less likely. Additionally, a building and parking lot to the south of the future fitness center will be demolished and converted to a sports field, which should compensate for the reduction of recharge at the site, caused by the construction of the future parking lot and fitness center.

The effects of the planned construction on the groundwater flow and elevations of the site will be qualitatively evaluated as part of the Long-Term Monitoring, through the measurement of water levels in one monitoring well located within in the WMA and three monitoring wells upgradient of the WMA. In addition, annual groundwater monitoring of three monitoring wells upgradient of the WMA will ensure that groundwater flow reversal and/or migration of groundwater contamination beyond the WMA compliance boundary does not occur undetected.

Specific Comments

1. ***Comment:*** *p. 2, Media to Monitor*

The text states that groundwater upgradient of the waste management area (WMA) will be monitored such that "…Monitoring data will be compared to site historical groundwater data …." This is not consistent with the Record of Decision (ROD). Please see comment below on the Project Action Levels.

Response: Please see response below to the comment on project action levels.

2. ***Comment:*** *p. 2, Project Action Levels*

The proposal to use "…Clean up levels in the ROD, MCLs, or upgradient concentrations before remediation, whichever are higher…" is not consistent with the ROD. On page 20, Section 2.8, the ROD states: "However, these groundwater cleanup levels will be used solely for the purpose of comparing groundwater monitoring data collected upgradient of the site, because all contaminated groundwater is limited to within the compliance boundary…." If groundwater contamination exists outside the compliance boundary in excess of the cleanup goals then either it has migrated from the compliance area already or it is related to another release that has yet to be investigated. In either case, EPA cannot accept groundwater contamination outside of the compliance boundary at concentrations that pose a risk to human health if no action is taken to minimize the risk. The project action levels for groundwater should be the cleanup levels specified in the ROD.

Response: It is agreed that the project action levels will not include historic upgradient groundwater monitoring results. If concentrations are found in the upgradient monitoring wells above project action levels, there are several possibilities to explain the presence of the elevated concentrations upgradient of the site. As stated in the comment the contamination could have migrated from the site (if the groundwater flow changed direction) or it could be from an unknown release, or it could potentially be related to naturally occurring background concentrations. There is currently only one round of groundwater data available that was collected from the upgradient wells, therefore, not enough information is available to establish a background concentration. If the long term monitoring of the groundwater at OFFTA shows that there are persistent groundwater concentrations above PALs all three possibilities would be considered to determine the reason for the presence of the elevated groundwater concentrations. The groundwater monitoring data from the wells upgradient will be compared with the cleanup levels from the ROD in addition, the local hydraulic gradient will also be measured during sampling events to confirm the groundwater flow direction to be south to north (to Coasters Harbor).

3. ***Comment:*** *p. 4, Decision Rule #1*

Based on the sampling frequently proposed on page 2 (annual monitoring) it is not acceptable to require an exceedance of the monitoring criteria for three consecutive monitoring periods before the Navy begins to consider a response to address the exceedances. That would allow the condition to exist for more than two years without a protective action being taken. If the monitoring criteria are exceeded for any monitoring event then Navy should resample the wells within three months. If the exceedance is not repeated then annual monitoring shall resume on the original schedule. If the exceedance is repeated, Navy should resample again within three months. If the exceedance is not repeated then annual monitoring shall resume on the original schedule (six months from the second resampling). If the exceedance is repeated, the team should meet to discuss how to respond to the exceedance with a remedy.

Response: The frequency of monitoring will be revised. The Navy proposes to sample the groundwater on a semiannual basis. The results of the groundwater sampling will be evaluated and assessed annually in the annual report. In the event of an exceedance of the PALs the exceedance will be discussed with the regulators in conjunction with the submittal of the annual report. The sampling frequency would be evaluated during the five-year review to determine if an increase or decrease in sampling frequency is appropriate.

4. ***Comment:*** *p. 4, Decision Rule #2*

Further clarification and modification of this decision rule is required to establish an appropriate decision rule. As written, it appears that the Navy will compare the sediment monitoring results directly to the previous data and not to the 95% confidence (two standard deviations) limits, but that is not clear. Consider comparing the mean of the monitoring data to the mean of the historical data and also look at the individual sample results versus the mean as indicators of contaminant migration. See also the comment on the sediment sample locations.

Response: It was the intent of the decision rule to compare each long term monitoring result to the mean of the historical data plus two standard deviations (95% confidence) to determine if there is an exceedance. The text in decision rule has been edited and includes a reference to the table and SAP worksheet where the sediment PALs are presented.

5. ***Comment:*** *p. 4, Optimization*

Any changes to the monitoring program require EPA and RIDEM concurrence before implementation. Any mutually agreed-to changes will be documented in an addendum to the long-term monitoring plan.

Response: Agreed. This will be stated in the SAP.

6. ***Comment:*** *Figure 1*

a) Please establish another location for the replacement well for MW-01 because of the proposed location of the subsurface infiltration system upgradient of the proposed monitoring well location. It is possible that this infiltration system could dilute the local groundwater with roof drainage and also cause mounding that could divert groundwater flow away from this area. EPA is also concerned about side-gradient migration of contamination from the waste management area. Consequently, more than two groundwater monitoring wells are required to adequately monitor the compliance boundary. The required number of monitoring wells and their locations can be established when better information is available regarding the impacts of the buildings and pavement on the groundwater flow direction and elevations.

Response: Due to the shape of the site and the location of the infiltration system, another location of an upgradient monitoring well is not readily apparent. It is proposed to keep the one existing upgradient monitoring well in the LTMP and to add two side gradient monitoring wells. The proposed locations are shown on Figure 4 of the accompanying Sampling and Analysis Plan.

b) The sediment monitoring locations are weighed too heavily to the sides of the compliance area. Different sediment monitoring locations are needed to focus more on the center of the compliance area while still monitoring at the sides. Further discussion is needed to establish the appropriate sediment monitoring locations.

Response: The proposed sediment monitoring points have been adjusted to provide a more even spacing across the site. Note that the sediment locations no longer match historic sampling locations exactly.