

11/5/07-01713



November 5, 2007

USEPA Region 3  
Attn: Steven Hirsh  
1650 Arch Street  
Philadelphia, PA 19103-2029

Subject: Response to EPA Comments  
*Draft Removal Action Work Plan, Upper Reaches of Bousch Creek (Site 1); Naval Station Norfolk; Norfolk, Virginia, AGVIQ/CH2M HILL Joint Venture II, September 2007*

Dear Mr. Hirsh:

On behalf of the Navy, this response letter has been prepared regarding EPA's comments dated October 18, 2007, on the *Draft Removal Action Work Plan, Upper Reaches of Bousch Creek (Site 1); Naval Station Norfolk; Norfolk, Virginia, AGVIQ/CH2M HILL Joint Venture II (JV II), September 2007*. These comments were provided to Ms. Winoma Johnson (NAVFAC MIDLANT) via email on October 22, 2007. The following responses are provided for each comment:

1. Section 2 provides a list of objectives of the removal action. The description states that two feet of contaminated sediment would be removed from the primary and secondary areas and only one foot of clean fill would be backfilled except in the concrete-lined portion of the primary area, where no backfilling will occur. It would be helpful to readers not familiar with the project if an explanation were provided stating why only one foot of backfill will be used. Furthermore, the objectives should be reworded so they are more consistent with the EE/CA. Specifically, the "concrete-lined" portion of the channel will not be backfilled IF there is actually "concrete on the bottom." If there is unexcavated sediment above a concrete bottom after two feet of material has been excavated and the excavation was therefore discontinued, filling with one foot of clean sand is necessary.

**Response:**

An explanation of the excavation and backfill depths will be provided in this section to help readers not familiar with the project. The Navy recognizes that unexcavated sediment would be covered with clean backfill and has confirmed the presence of a concrete bottom in the "concrete-lined" portion. The text in Section 2 will be revised as follows to make this clearer:

As provided in the Engineering Evaluation/Cost Analysis (CH2M HILL, 2007), the objective of this removal action is to implement measures at Bousch Creek that would reduce or eliminate contaminant ecological risk drivers. This project includes the excavation of approximately 7,780 cubic yards of combined sediment from the Primary and Secondary Areas of Bousch Creek

(Figure 1-3). To meet the objective of the removal action, the following tasks are scoped in TO-017 for the Primary and Secondary Areas of Bousch Creek:

- Characterize sediment to be excavated to support appropriate disposal in a licensed facility.
- Excavate 2 ft sediment in Primary and Secondary Areas (or to concrete in the concrete-lined portion of the Primary Area; whichever is less<sup>1</sup>).
- Transport and dispose excavated sediment at a qualified disposal facility in accordance with state and federal regulations.
- Fill excavated areas with 1 ft clean sand (except in the concrete-lined portion of the Primary Area pending depth to concrete<sup>1</sup>).
- Restore the site.

All activities associated with TO-017 SOW will be performed in a safe, compliant, and expeditious manner and in accordance with the HSP (Appendix A) and the QCP (Appendix B). The following major activities are included in the removal action SOW:

- Pre-excavation sediment characterization for disposal
- Pre-mobilization coordination
- Mobilization and site setup
- Site preparation
- Excavation
- Transportation and disposal
- Backfill and restoration
- Demobilization
- Closeout Report

The execution of individual tasks will be pre-planned but may overlap durations to maximize project efficiency. The proposed project schedule is presented as Figure 2-1.

2. On page 3-6, Section 3.5 states, "In lieu of impacting the wetlands, JV II will use long-reach excavating equipment to reach out into Bousch Creek as far as possible in the vicinity of SD-10." Clarification should be provided to demonstrate that the removal in this area will be adequate.

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<sup>1</sup> The operation in the concrete-lined portion of the Primary Area involves the removal of approximately 2 ft of sediment only or removal to the concrete floor, if present. Clean backfill will not be placed into the concrete-lined portion unless the sediment is greater than 2 ft in vertical thickness, which is not anticipated (based on field observations the sediment thickness is 2 ft or less throughout this portion). This 1 ft of backfill would provide a cap over the existing sediment, if encountered.

**Response:**

The Team discussed in the September 2007 Tier I Partnering Meeting that removing sediment to and around sample location BC-SD04-10 would require considerable habitat disruption. Therefore, the Team discussed that removing sediment as close as possible to BC-SD04-10 with a long reach excavator from the top of the bank on the southern end of the concrete-lined portion of Bousch Creek would provide the lowest impact to the habitat. The text of the third and fourth paragraphs in Section 3.5 will be revised as follows:

Small track equipment will be lowered into the concrete-lined portion of the creek (Phase II). This equipment will push the sediment from the north end to the south end of the concrete lined channel, where long-reach excavating equipment will remove the sediment from a position on the bank.

In lieu of impacting the emergent wetlands that feed into the concrete-lined channel from the southwest (Figures 1-2, 1-3, 3-1, and 3-2), JV II will use long-reach excavating equipment to reach out as far as possible from upland areas in the vicinity of sampling location, BC-SD04-10, which, based on survey data, will be field located during site layout. Since the width of the creek is estimated to be over 100 feet in this area, and is adjacent to emergent wetlands that feed into the creek from the southwest in this vicinity, excavation and backfill be completed as far into the channel as possible around this sampling location without affecting wetlands along the edge of the creek.

3. On page 3-6, Section 3.5 states that no confirmation samples will be collected per the approved removal alternative in the EE/CA." The text should provide an explanation for this for those readers that are unfamiliar with the project.

**Response:**

The Team decided that confirmation samples would not be necessary because contaminated sediment would be removed to a depth of two feet, which corresponds to the depth of the deepest sample collected during the investigation process as documented in the Final Ecological Risk Assessment and utilized for the basis of the alternatives considered in the EE/CA. These documents were used as the basis to prepare this work plan. The text of the last paragraph in Section 3.5 will be revised as follows:

The TO-17 SOW, based on the approved removal alternative in the Final EE/CA (CH2M HILL, 2007b), provides for the disposal of 12,439 tons of excavated material. As specified in the selected alternative (Alternative #2) in the Final EE/CA, which was based on a Tier I Partnering Team consensus agreement documented in the November 2006 meeting, no confirmation samples will be collected following two feet of excavation (or to concrete in the concrete lined portion). Following excavation, one foot of clean fill will

be placed over excavated sediments. The final excavation depths will be surveyed by JV II to document the removal action.

4. On page 3-7, Section 3.7.1, Placement of Backfill, indicates that the fill material will be at or below residential RBCs. As this action is being taken to address ecological risks, it must be specified that the fill material will also be free from any contamination which exceeds site-specific PRGs or risk values. Furthermore, it should be clarified that backfilling may be necessary in Phase II if any unexcavated sediments remain after the removal of two feet of material.

**Response:**

The text will be revised to clarify that unexcavated sediment would be covered with clean backfill (if concrete is not encountered in Phase II). Regarding clean fill material: As agreed by Tier I Partnering Team, the extent of the removal was based on sample locations as excavation limits—the sample locations were selected based on toxicity test results. Therefore, no PRGs were calculated. The Navy proposes using the highest value between the following two datasets for each chemical to evaluate the backfill material:

- Dataset 1 would consist of the maximum concentrations from sediment reference sample locations BC-SD04-18, -19, and -20 (half the detection limit if not detected).
- Dataset 2 would consist of the minimum NOEC concentration for growth, survival, and reproduction.

The Datasets 1 and 2 as well as the selected values are attached (Attachment A, Table 1). The selected values will be described and included in the Final Work Plan. The text in Section 3.7.1 will be revised as follows to specify the backfill analyses and these selected values (note that new Table 1 will be created to show the selected values; therefore, the draft work plan Table 1 will be renumbered to Table 2):

After confirming and documenting sediment excavation, JV II will begin backfilling operations. Clean fill will be delivered to the site from an offsite source. Prior to delivery, the backfill material will be analyzed to verify the selected material is protective of ecological receptors. The backfill sample will be analyzed for metals, SVOCs, pesticides, PCBs, BTEX, and TPH. Chemical concentrations for backfill will be at or below the values listed in Table 1 and established NSN background values. The fill will meet Virginia requirements of 9VAC 20 80 700(D)(5) for clean fill with a TPH concentration below 50 milligrams per kilogram (mg/kg) and a total BTEX concentration below 10 mg/kg. In addition, the fill shall be free of debris, roots, scrap material, vegetation, refuse, and soft unsound particles, and will conform to American Society for Testing and Materials (ASTM) D2487 classification GW, GP GM, SW, SM.

5. Section 3.4.2 discusses the site clearing that will be needed to access the creek for the removal action. Following completion, Section 3.7.2 states that the disturbed slopes will be hydroseeded with an approved native grass mix consistent with existing conditions. The proposed seed mix is not appropriate, as two of the species (velvet grass and sweet white clover) are non-native, and the two vine species (trumpet creeper and Virginia creeper) will not provide adequate erosion control and are too aggressive. BTAG recommends that the following native grass seed mixture be used. All seeding rates are per acre of pure live seed (PLS). The PLS should be specified when ordering.

	<u>Pounds/Acre PLS</u>
Big Bluestem ( <i>Andropogon gerardi</i> )	4
Little Bluestem ( <i>Schizachyrium scoparium</i> )	6
Switchgrass ( <i>Panicum virgatum</i> )	2
Indiangrass ( <i>Sorghastrum nutans</i> )	6
Canada Wild Rye ( <i>Elymus canadensis</i> )	10
Partridge Pea ( <i>Cassia fasciculata</i> )	2
Annual Rye Grass ( <i>Lolium multiflorum</i> )	25

The restoration of the site discussed in Section 3.7.2 does not include the replanting of trees following completion of the removal action. BTAG had recommended that the EE/CA specify that trees be replanted in all areas where they were removed. Planting trees will help restore the site to pre-removal conditions and reduce the colonization by invasive species. The following species of trees and shrubs are appropriate for planting:

Trees

willow oak (*Quercus phellos*)  
white oak (*Quercus alba*)  
  
southern red oak (*Quercus falcata*)  
water oak (*Quercus nigra*)  
persimmon (*Diospyros virginiana*)  
black gum (*Nyssa sylvatica*)

Shrubs

wax myrtle (*Myrica cerifera*)  
common elderberry (*Sambucus canadensis*)  
arrowwood (*Viburnum dentatum*)  
serviceberry (*Amelanchier canadensis*)  
black chokeberry (*Aronia melanocarpa*)  
sweet pepperbush (*Clethra alnifolia*)

BTAG recommends planting mostly trees (perhaps 75%), but shrubs should also be planted to provide more diversity (around 25%). A minimum of a 10 foot buffer should be planted, with plants on ten foot centers (this would equate to two staggered rows, one along the edge of water and one ten foot back). The buffer should be wider in areas where the pre-removal buffer was wider. In these areas, the buffer should be restored to pre-removal width. The buffer should be seeded prior to tree and shrub planting. At least four species of shrubs and four species of trees from

the list should be planted. Planting should not occur during the summer. Late fall to early spring is the preferred planting time. One gallon potted or bare root material is recommended. Once trees are planted, barriers or signs should be placed along the edge of the riparian buffer to prevent the area from being mowed.

**Response:**

The Navy will change the native seed mixture for restoration to the seed mixture recommended by BTAG. The comment regarding potential tree re-planting is noted and will be taken into consideration by the Navy during the development of any tree restoration plan in accordance with base protocol(s). The plan for clearing operations is to cut any trees at the top of and on the banks of the creek that restrict access to the sediments down to approximately 18 inches to minimize erosion (i.e., no grubbing or root ball removal) to allow equipment access to the creek sediment and around/over the above ground steam line. Tree removal will mainly be in the portion of the project (Phase I) immediately adjacent to the Camp Allen Landfill (Site 1) to create an access way for equipment along the creek. The width of the clearing will from the steam line north to the creek in this area. Other areas requiring clearing will be to the minimum extent necessary.

6. Section 3.7.2 states that Type I temporary erosion control matting will be placed on disturbed slopes. BTAG strongly recommends that the matting be 100% natural material (i.e., jute). Matting should not contain the plastic reinforcing mesh as reptiles, amphibians and small mammals can get trapped in the plastic mesh.

**Response:**

The Navy agrees with BTAG's recommendation. Jute matting will be specified in the work plan and utilized during restoration.

If you questions or comments concerning these responses, please contact Ms. Winoma Johnson at (757) 444-3418.

Sincerely,

AGVIQ/CH2M HILL Joint Venture II

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Project Manager

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