

## St. Juliens Creek Annex Restoration Advisory Board Meeting Summary: February 3, 2009 Meeting

### RAB Members Present:

Walt Bell	NAVFAC Mid-Atlantic	John Burchette	EPA (Region III)
Robert Mann	RAB Community Co-chair	Jim Cutler	Virginia DEQ
Glenn Manning	RAB	Janna Staszak	CH2M HILL
Kevin Lew	RAB	Adrienne Jones	CH2M HILL
John Allen	RAB		

**Location:** Major Hillard Library, Chesapeake, Virginia

**Meeting Date:** February 3, 2009

**From:** Adrienne Jones/CH2M HILL

**Minutes Date:** April 1, 2009

### Restoration Advisory Board Welcome and Introductions

At 4:30 PM Mr. Bell presented opening remarks and introductions to the Restoration Advisory Board (RAB). Mr. Bell indicated that he has transitioned into the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Remedial Project Manager (RPM) position for St. Juliens Creek Annex (SJCA). Handouts of all of the presentations were distributed.

### Fiscal Year 2009 Goals

Mr. Bell summarized the Fiscal Year (FY) 2009 Goals. He reviewed the objectives of the presentation, which were to provide an overview of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process; provide an update of the Environmental Restoration Program (ERP) sites and FY 2009 goals for the Installation Restoration Program (IRP) sites, Munitions Response Program (MRP) sites, and for facility-wide; and answer any questions.

Mr. Bell provided an overview of the CERCLA process. Mr. Bell explained when and why goals are established. Goals are established yearly to cover the FY, which starts on October 1 and ends on September 30. The goals serve as a budgeting tool for allocating funds, prioritizing sites to be investigated and remediated based on their potential risk to human health and the environment, and keeping remediation projects on schedule. A figure was presented showing the status of the ERP sites at SJCA.

Mr. Bell presented the status of IRP Site 2. Site 2 is a 5.7-acre, unlined waste disposal area for construction debris, blast grit, waste ordnance, and solvents, which operated from 1921 to 1942. A Remedial Investigation (RI) was conducted at the site from 1997 through 2008 and identified potential risk to human health and/or the environment from waste; chlorinated solvents, one polycyclic aromatic hydrocarbon (PAH), and one pesticide in the shallow aquifer groundwater; chlorinated solvents and metals in the surface water; PAHs, pesticides, one polychlorinated biphenyl (PCB), and metals in the sediment; and PAHs, pesticides, PCBs, and metals in the soil. A Feasibility Study (FS) is currently ongoing for the site. The FY09 goals established for Site 2 are to finalize the FS by March 30, 2009 and have the Record of Decision (ROD) signed by September 30, 2009.

Mr. Bell presented the status of IRP Site 4. Site 4 is an 8.3-acre landfill that operated from 1970 to 1981. The RI was completed in 2003 and identified potential concerns from the waste; metals, PCBs, and PAHs in soil; and mercury in drainage sediment. Soil cover installation and drainage ditch removal were completed in October 2005 in accordance with the ROD. The Remedial Action Completion Report was completed in September 2006 and a Land Use Control (LUCs) Remedial Design was implemented to prohibit disturbance of the soil cover and residential use of the site. Signs and fencing have been installed at the site, a survey plat was filed with the City of Chesapeake, annual inspections are conducted at the site, and base planning is involved to ensure the LUCs are maintained. Quarterly voluntary groundwater monitoring was conducted November 2006 through August 2008 to evaluate the site's impact on groundwater quality and the report is currently being drafted. The FY09 goal established for Site 4 is to finalize the Voluntary Groundwater Monitoring Report by March 30, 2009.

Mr. Bell presented the status of Site 5. The site consists of approximately 23 acres used as a burning grounds from the 1930s to the 1970s. Various wastes were reportedly disposed of, including solvents, paint sludge, pesticides, and refuse. A RI was conducted at the site from 1997 through 2007 and identified potential concerns: waste and metals, pesticides, and PAHs in the surface soil and drainage sediment. An Engineering Evaluation/Cost Analysis (EE/CA) was conducted to develop a removal action to address the potential concerns. A removal action is currently ongoing. The FY09 goals established for IRP Site 5 are to finalize the Construction Closeout Report for the removal action by June 30, 2009 and draft the Proposed Plan by June 30, 2009.

Mr. Bell presented the status of IRP Site 21. Site 21 is an industrial area of the base. Historically, buildings were used as maintenance and electrical shops and munitions loading facilities, outdoor areas were used for equipment and chemical storage, and a fuel service station was operated. A RI was conducted from 2003 to 2008 and identified potential concerns from chlorinated solvents in the shallow aquifer groundwater and indoor air. The potential concern associated with indoor air is currently being investigated further and a FS for groundwater is currently ongoing. The FY09 goals established for Site 21 are to draft the Proposed Plan by December 31, 2008 (delayed due to FS comment resolution) and finalize the Interim ROD by September 30, 2009.

Mr. Bell presented the status of MRP Area UXO 001. The MRP Area UXO 001 consists of approximately 1,800 linear ft along the Southern Branch of the Elizabeth River and includes the former and current wharf areas. The northern wharf area was constructed in 1917 and was used for loading and unloading of munitions and explosives of concern (MEC),

especially Marx VI mines. The wharf is no longer present, with the exception of some pilings. The southern wharf area was constructed during WWII. The wharf was damaged when two ships struck it in 1975. The wharf is still in use but is not used for ordnance loading or unloading. A Preliminary Assessment for the area began in January and is ongoing. The FY09 goal established for MRP Area UXO 001 is to finalize the Preliminary Assessment by June 30, 2009.

Mr. Bell presented the additional goals established for the base which consist of drafting the Site Management Plan for FY 2010 through 2014 by June 30, 2009 and preparing a Success Story by September 30, 2009.

Mr. Bell explained that the partnering team is planning for FY09 with an expected funding in the amount of 3.5 to 4 million dollars, and provided the Remedial Action at Site 21 as an example activity to be funded.

### Site 5 Removal Action

Ms. Staszak summarized the removal action being conducted at Site 5. The objectives of the presentation were to provide the site background, present the approach for the removal action, present the next steps for Site 5, and answer any questions. Ms. Staszak presented a figure showing the location of Site 5 within SJCA. The site consists of approximately 23 acres in the northeastern portion of the facility. Site 5 was operated as the burning grounds from the 1930s to the 1970s. The area was used for disposal of ordnance wastes through burning. Historical records indicate other wastes were also disposed in the area, including refuse, solvents, paint sludge, and pesticides. Ms. Staszak indicated that approximately 4 acres of the site were used for the burning operations.

Ms. Staszak explained the removal action approach. The removal action is being conducted to address risks identified in the RI: waste, metals, and pesticides in the waste/burnt soil area; metals and pesticides in the surface soil; and metals and pesticides in the drainage ditches. The removal action was divided into three phases. Phase 1 addresses the waste/burnt soil area, which will be excavated to the extent of visible contamination/debris (estimated excavation depth a maximum of 2.5 ft. below ground surface). Munitions from past site use may be present within this area. Phases 2 and 3 address soil and sediment areas that present a potential threat to human health or the environment. The soil and sediment in these areas will be excavated to a depth of 1 ft. below ground surface. The excavated materials will be hauled to an EPA-approved landfill. The site will be restored as a mixed habitat, consisting of upland areas and restoration and expansion of a wetland. Figures depicting the removal action phases and site restoration plan were shown.

Ms Staszak discussed the work that has been completed at the site to date. Mobilization initially occurred in December 2007 and included waste characterization sampling for the Phase 1 area and site setup and installation of erosion and sediment controls. Work was stopped when a Mark 1 smoke hand signal was encountered during silt fence installation in January 2008. Naval Ordnance Safety and Security Activity (NOSSA) determined an Explosive Safety Submission (ESS) was needed prior to resuming work at the site. The ESS was finalized in December 2008. While the ESS was prepared and prior to its approval, an ESS Determination request was approved by NOSSA to allow limited activities to continue prior to the ESS approval: Waste characterization sampling for Phases 2 and 3 was

conducted in April 2008. 9,700 cubic yards of top soil was stockpiled in May 2008 near the site to support the restoration activities. Removal of the Phase 2 area and portion of the Phase 3 area not adjacent to the waste/burnt soil area was conducted from July to September 2008. Approximately 2,200 cubic yards of soil was removed and the areas were backfilled to grade. No munitions or explosives were encountered during the activities.

Ms. Staszak explained the speed bumps encountered at the site during the removal action to date. The ESS development and approval took much longer than expected. There were unique circumstances to address because the item was not fragmenting, which made it difficult to determine the appropriate explosive arch to use in the ESS. A contingency was built in to the ESS to allow work to continue if an item with a larger net explosive weight is encountered. Additionally, the operational approaches of the removal action subcontractor had to be revised. Ms. Staszak explained that the Navy EOD is unable to respond to items that are safe to move and, therefore; provisions for the removal contractor to be able to store and ultimately destroy the items at the site was required. Mr. Lew asked who determines if an item found is safe to move. Ms. Staszak responded that the removal action contractor has an UXO subcontractor on site who is qualified to determine if items are safe to move.

Waste characterization samples indicated that hazardous lead is present in the soil in some locations. A plan was developed to stabilize the lead in the soil to ensure the lead remains bound to the soil. The soil will be rendered non-hazardous before being shipped off-site for disposal. Mr. Cutler clarified that the leachability results from the waste characterization sampling indicated that the soil had hazardous lead results; therefore, the stabilization would be performed to bind up the leachable lead in the soil during treatment.

Ms. Staszak discussed the steps to complete the removal action. Phase 1 will be conducted from February through May 2009. Re-mobilization to the site occurred on January 26, 2009. This phase will include mechanical screening of material to remove potential MEC and excavation of approximately 17,000 cubic yards of waste and soil. Phase 3 will be conducted May through June 2009 and will include excavation of approximately 5,600 cubic yards of soil/sediment. Site restoration will occur June through July 2009 and will include topsoil placement, hydroseeding, and planting of trees, shrubs, and wetland plants. The Construction Closeout Report documenting the removal action activities should be completed in November 2009.

Ms. Staszak reviewed the next steps following the removal action for the site. The Proposed Plan will recommend no further action for the site and is expected to be completed in the winter of 2009, a public comment period and meeting will be incorporated in the schedule of the Proposed Plan. The ROD is also expected to be completed in the winter of 2009.

## **SJCA and Area Hydrogeology**

Ms. Jones summarized the hydrogeology of SJCA and the surrounding area. Objectives of the presentation were to present the regional geology of the surficial units of the area surrounding SJCA, describe the likely flow of contaminants from SJCA, describe the use of water resources in the area surrounding SJCA, and answer any questions. A figure depicting the surficial hydrogeologic units in the vicinity of SJCA, including the Columbia aquifer, Yorktown confining unit, Yorktown aquifer, and St. Mary's confining unit was displayed.

Mr Allen inquired about the depth to groundwater at SJCA. Ms. Jones indicated that it varies from 2 to 7 ft. below ground surface.

Ms. Jones displayed a figure showing the location of the active and LUC sites at SJCA. The Columbia and Yorktown aquifers have been investigated at each of the sites, and no potential impacts to deeper aquifers was identified. Groundwater contamination has been identified at Sites 2 and 21, and is limited to the Columbia aquifer.

Ms. Jones presented a figure depicting the generalized vertical and horizontal groundwater flow in the vicinity of SJCA. In both the Columbia and Yorktown aquifers, groundwater discharges to nearby surface water bodies (e.g., Blows Creek, St. Juliens Creek, Southern Branch of the Elizabeth River). The Yorktown confining unit is not continuous beneath major surface water bodies surrounding the base, so the upward gradient beneath these surface water bodies pulls water discharging from the groundwater into the surface water bodies.

Ms. Jones discussed the sources of potable water in neighborhoods adjacent to SJCA. The potable water in all of the surrounding neighborhoods is supplied by the City of Portsmouth. The drinking water is supplied from two main sources: surface water reservoirs located in the City of Suffolk (including Lake Meade) and deep groundwater wells installed in the Potomac aquifer, which is located approximately 500 ft. below ground surface. Mr. Lew asked where the drinking water at the facility comes from; Ms. Jones indicated that it comes the City of Portsmouth as well.

Mr. Allen asked what contaminants are present at Site 21; Ms. Jones replied chlorinated solvents. Mr. Allen recalled historical sandblasting activities at Site 21, which may have contributed to the contamination. Mr. Allen asked if the Navy would clean up the contamination or contain it. Ms. Jones responded that the Navy is currently in the FS process for both groundwater sites (Sites 2 and 21) and remedial alternatives are currently being evaluated, but would likely include a treatment component.

Mr. Manning asked how the Navy was addressing contamination discharging from the groundwater to the surface water bodies surrounding the base. Ms. Staszak explained that the Navy has preformed investigations in Blows Creek and within the Southern Branch of the Elizabeth River to determine whether the facility has impacted those water bodies, and only identified a small area of potential impact at the outfall of a culvert from Site 2 to St. Juliens Creek. Mr. Manning inquired about the Navy's interaction with local groups such as the Elizabeth River Project. Mr. Bell responded that representatives of NAVFAC are involved with the Elizabeth River Project, including attending meetings.

### **Sites 2 and 21 Feasibility Studies**

Ms. Staszak presented an overview of the Sites 2 and 21 FSs. Objectives of the presentation were to review the objectives and process of FSs, present overviews of the FSs for Sites 2 and 21, and discuss the site schedules.

Ms. Staszak presented an overview RI/FS phase of the CERCLA process. The purpose of the phase is to determine the nature and extent of the threat presented by a release of a hazardous substance, and if necessary, to evaluate proposed remedies. The RI and FS can be combined or conducted independently. The objectives of the RI phase are to characterize site conditions and nature and extent of risk posed by contamination, obtain data for the

evaluation of remedial alternatives if the site poses an unacceptable risk, provide a basis for decisions on further response actions or no further action, and provide information to refine the conceptual site model (CSM). The RI forms the basis for the development of Remedial Action Objectives (RAOs) and remedial strategies. The objectives of the FS phase are to develop and evaluate potential remedies that permanently and significantly reduce the threat to public health, welfare, and the environment; select a cost-effective remedial action alternative that mitigates the threat(s); and facilitate consensus among Navy, EPA, state, and local authorities regarding the selected response action.

The FS process consists of developing RAOs, identifying Applicable or Relevant and Appropriate Requirements (ARARs), establishing cleanup levels, identifying and screening remedial alternatives, and performing a detailed evaluation of the remedial alternatives.

RAOs are site-specific goals formed based on the CSM, considering the following: contaminants of concern (COCs), impacted media, fate and transport of COCs, and potential exposure routes and receptors. They provide a clear and concise description of what the remedial action should accomplish at a given site.

There are three types of ARARs: chemical-specific, action-specific, and location-specific. Ms. Staszak explained each of the types and provided examples. The identification of ARARs is a critical aspect of the FS process because it provides the regulatory basis for the remediation action.

Cleanup goals are established to be protective of human health and the environment and take into consideration ARARs, current land use, future land use, LUCs, and site-specific assumptions used to develop the risk assessment.

The remedial alternatives screening consists of reviewing the remedial technologies and methods that are appropriate to the site and the threat posed by the contaminants; combining technologies and LUCs to formulate complete, protective alternatives for permanent remediation; and screening the alternatives using broad criteria to select a reasonable number of alternatives for detailed analysis, including short- and long-term aspects of the effectiveness, implementability, and cost.

The detailed evaluation consists of evaluating the alternatives against the nine National Contingency Plan (NCP) criteria, which are divided into threshold, primary, and modifying criteria types. Threshold criteria evaluate an alternatives ability to adequately protect human health and the environment and achieve the required ARARs. Primary criteria evaluate an alternative's long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; short-term effectiveness; implementability; and cost. Modifying criteria takes into consideration the state's and public's preference for remediation and is documented in the ROD.

Ms. Staszak explained that two sites at SJCA, Sites 2 and 21, are currently in the FS stage and provided a summary of each.

A RI was conducted at Site 2 from 1997 through 2007 and identified potential concerns from waste; chlorinated solvents, one PAH, and one pesticide in the shallow aquifer groundwater; chlorinated solvents and metals in the surface water; PAHs, pesticides, one PCB, and metals in the sediment; and PAHs, pesticides, PCBs, and metals in the soil. The

graphic CSM for Site 2, which depicts the sources of contamination and impacted media, was presented. Ms. Staszak explained that common components of alternatives were grouped together for evaluation in the Site 2 FS and a figure depicting the common components was presented. The eight alternatives retained for evaluation at Site 2 were briefly explained and the comparative analysis was presented. Mr. Allen asked how much cubic ft of material is in the high-concentration remediation area. Janna responded she is unsure of the volume but that it is a large area, roughly 18,000 square ft in area and 20 ft in depth. Mr. Allen asked if it is expensive to perform the injections. Janna provided an explanation of the cost per benefit unit analysis and explained that the cost per benefit unit of the injections was greater than excavation. The draft FS is currently under regulatory review and an alternative has not been chosen.

A RI was conducted at Site 21 from 2003 to 2008 and identified potential concerns from chlorinated solvents in the shallow aquifer groundwater. The CSM for Site 21, depicting the groundwater contamination, was presented. The remedial alternatives retained for evaluation were presented. The difference between in situ chemical oxidation (ISCO) and in situ chemical reduction (ISCR) was explained; ISCO technology relies on oxidizing conditions in the aquifer while ISCR relies on reducing conditions. The draft FS for Site 21 is currently under regulatory review and Alternative 3 has been identified as the preferred alternative by the team.

Ms Staszak reviewed the schedules for the Sites 2 and 21. The Site 2 FS will be finalized following comment resolution at the end of February/beginning of March. The Site 2 Proposed Plan should be available for public review June/July timeframe. The Site 21 FS will be finalized following comment resolution at the middle/end of February. The Proposed Plan should be available for public review May/June timeframe.

### **Roundtable / Q & A**

Mr. Bell asked if anyone had general question or comments that they would like to discuss. No roundtable topics were brought forward for discussion.

### **Next Meeting:**

Mr. Bell suggested that the next RAB meeting be held in conjunction with the public meeting for the Sites 2 and 21 Proposed Plans, which is estimated for June 2009. Ms. Staszak asked if there were any topics that the RAB members would be interested in. No suggestions were made.

Action – Janna send public website link and handouts to Mr. Lew.

**Meeting Adjourned.**