

St. Juliens Creek Annex Restoration Advisory Board Meeting Summary: November 3, 2016 Meeting

Meeting Attendees

Walter Bell	NAVFAC Mid-Atlantic	Pat Burns	RAB Community Member
Robert Stroud	EPA Region 3	Glenn Manning	RAB Community Member
Karen Doran	VDEQ	Kevin Lew	RAB Community Member
Weel Lindsay	VDEQ	Charles E. Bruner	RAB Community Member
Bill Deane	CB&I	Barbara Brumbaugh	RAB Community Member
Madison Witte	CB&I	Kathryn Smith	CH2M
David Cohen	Meadows	Adrienne Jones	CH2M
Robert Mann	RAB Community Member		

Location: Major Hillard Library, Chesapeake, Virginia

Meeting Date: November 3, 2016

From: Kathryn Smith/CH2M

Minutes Date: July 6, 2017

Restoration Advisory Board Welcome and Introductions

At 5:06 p.m., Mr. Bell presented opening remarks and introductions to the Restoration Advisory Board (RAB). Mr. Bell thanked everyone for coming and explained that he is the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Remedial Project Manager for St. Juliens Creek Annex (SJCA). The other RAB members and guests introduced themselves. All presentation handouts were distributed.

St. Juliens Creek Annex Construction Complete – What is Next?

Mr. Bell led the presentation. The objectives of the presentation were to provide an overview of the Construction Complete milestone as it applies within the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, identify where Environmental Restoration Program (ERP) sites at the facility are within the CERCLA process, explain the continuing activities necessary for the ERP sites, and solicit feedback from the RAB on modifying the RAB meeting schedule.

Mr. Bell reviewed the CERCLA process, how the construction complete milestone fits into the process, the different paths the currently active ERP sites at SJCA have taken in the process, and where the currently active ERP sites are within the process. He explained once all sites achieve no further action (NFA) or have a final remedy in place, the facility can achieve Construction Complete. With the NFA Record of Decision (ROD) for Site 5 being signed in FY 2016, all sites had a decision document in place and the facility was able to achieve Construction Complete. The sites that have ongoing remedial actions (RAs) and/or waste in place consist of Site 2, Site 4, and Site 21. Long-term management for those sites is ongoing after the remedy is in place and after Construction Complete is achieved.

Mr. Bell reviewed the continuing ERP activities at the facility. Remedial action-operation (RA-O) is currently ongoing at Site 2 and Site 21. The RA-O includes land use controls (LUCs) and monitoring at the sites until the cleanup levels set by the remedial goals have been achieved. Site 4 has achieved Response Complete but

continues to have LUCs because it has waste in place. Five-Year Reviews will continue for these three sites as long as there is waste in place and/or the remedial goals have not been met.

Mr. Bell explained the path forward for the RAB following achievement of Construction Complete will be discussed in the Roundtable at the end of the meeting, and asked if there were any questions on the construction complete process or ceremony. No questions or comments were received.

St. Juliens Creek Annex Fiscal Year 2017 Environmental Restoration Program Goals and Schedule

Mr. Bell led the presentation. The objectives of the presentation were to provide an overview of the CERCLA process, provide an update on the SJCA ERP sites and fiscal year (FY) goals, highlight FY 2016 successes, and solicit questions and comments from the RAB.

Mr. Bell provided a brief overview of the CERCLA process.

Mr. Bell explained ERP goals are established on a yearly basis by fiscal years, which begin on October 1 and end on September 30. The goals serve as a budgeting tool for allocating funding and prioritizing sites to be investigated and remediated based on potential risk to human health and the environment. In addition, the goals help keep projects in the remediation process on schedule.

Figures were presented which depicted the NFA ERP sites and the three currently active ERP sites (Sites 2, 4, and 21) at SJCA.

An update on Site 2 was provided. Site 2 is an unlined waste disposal area that operated from 1921 to 1942. Investigations conducted at the site identified concerns 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; and PAHs, pesticides, polychlorinated biphenyls, and metals in the sediment and soil. The selected remedy to address the concerns consists of enhanced reductive dechlorination (ERD), a permeable reactive barrier contingency, monitored natural attenuation, a soil cover, LUCs, and sediment excavation. Enhanced reductive dechlorination, monitored natural attenuation, and LUCs were put in place to remediate groundwater; with a contingency permeable reactive barrier included in the ROD for the site. A soil cover and LUCs were implemented for soil and sediment at the site, and excavation and offsite disposal were implemented for the sediment located in St. Juliens Creek. Surface water was eliminated through installation of the soil cover. Construction of the RA was completed in 2012.

Site 2 is currently in the RA-O phase. The RA-O activities currently consist of bi-annual groundwater monitoring, additional as-needed emulsified vegetable oil (EVO) injections (ERD), LUCs maintenance, and compensatory mitigation wetland monitoring. The first Five-Year Review was completed for the site in May 2015 and concluded that the remedy is protective in the short-term, but identified the following three issues that needed to be addressed to ensure long-term protectiveness:

- The cleanup level of naphthalene in groundwater was not protective of potential future use
- The emerging contaminants perchlorate and 1,4-dioxane were potentially present in groundwater but had not been evaluated
- Groundwater data was not yet available during the Five-Year Review to determine if the remedy was properly functioning.

The FY 2017 goals for Site 2 were to finalize the following reports:

- Mitigation Wetland Monitoring Year 1 Report
- Annual LUCs Inspection Report
- RA-O Monitoring Sampling and Analysis Plan Revision
- Construction Completion Report Addendum
- Mitigation Wetland Monitoring Years 2 and 3 Report
- RA-O Monitoring Event 4 Report

Mr. Bell asked if there were any questions or comments regarding activities at Site 2. Ms. Brumbaugh asked if there was a plan to remediate the emerging contaminants that were mentioned. Mr. Bell responded that an investigation was currently being planned to determine if the emerging contaminants 1,4-dioxane or perchlorate are present at the site, and if so, options would be evaluated to remediate them.

An update on Site 4 was provided. Site 4 is a sanitary landfill that operated from 1970 to 1981. Soil and sediment contaminated with PAHs, polychlorinated biphenyls, and metals were identified at the site. The RA to address the contamination, consisting of a soil cover, excavation of drainage ditch sediment, and LUCs, was completed in 2005. Site 4 is currently in the response complete phase with ongoing LUCs maintenance and Five-Year Reviews. The second Five-Year Review for Site 4 was completed in May 2015 and concluded that the remedy is protective. The FY 2017 goal for Site 4 is to finalize the Annual LUCs Inspection Report. Mr. Bell asked if there were any questions or comments regarding Site 4. No questions or comments were received.

An update on Site 21 was provided. Site 21 is the primary industrial area of the facility, where buildings were historically used for maintenance, electrical shops, and munitions loading, and outdoor areas were used for equipment and chemical storage. A fuel service station was also active but is no longer present. The environmental concern at Site 21 is chlorinated volatile organic compounds (CVOCs) in the shallow aquifer groundwater. In situ chemical reduction, ERD, and LUCs was the selected remedy to address the contamination at the site. The RA construction was completed in 2011 and the site is currently in the RA-O phase. The RA-O activities consist of bi-annual groundwater, storm water, and vapor intrusion monitoring, and LUCs maintenance. The first Five-Year Review for Site 21 was completed in May 2015, and concluded that the remedy is protective in the short-term and identified one issue that needed to be addressed to ensure long-term protectiveness: emerging contaminants perchlorate and 1,4-dioxane were potentially present in groundwater but had not been evaluated.

The FY 2017 goals for Site 21 were to finalize the following reports:

- RA-O Groundwater and Storm Water Monitoring Sampling and Analysis Plan Revision 2
- Annual LUCs Inspection Report
- RA-O Groundwater and Storm Water Monitoring Event 10 Report
- RA-O Vapor Intrusion Monitoring Event 10 Report

Mr. Bell asked if there were any questions or comments regarding Site 21. No questions or comments were received.

Mr. Bell stated the facility-wide goal for SJCA for FY 2017 was to complete the FY 2018 through FY 2022 Site Management Plan Update.

Mr. Bell highlighted the following FY 2016 successes for the SJCA ERP: finalization of the Site 5 ROD, which returned 23 acres of land to the facility with no land use restrictions, and achievement of the Construction Complete milestone for the facility.

Mr. Bell asked if there were any questions or comments. No questions or comments were received.

Site 2 Remedial Action Update

Mr. Deane led the presentation. The objective was to provide an overview of the upcoming phase II injections at Site 2.

Mr. Deane provided a brief site history and summary of previous actions conducted at Site 2. Site 2 RAs were being conducted in accordance with the ROD for the site. The RAs began in 2012 and have consisted of the following:

- Cover installation of waste, soil, and inlet sediment (completed)
- Excavation and off-site disposal of St. Juliens Creek Sediment (completed)
- ERD within high-concentration CVOC target area of shallow groundwater

- Initial injections (phase I) completed
- Groundwater monitoring phase is ongoing
- MNA within low-concentration CVOC, naphthalene, and heptachlor epoxide target areas of shallow groundwater are ongoing

The RA objectives relevant to the phase II injections are to prevent activities that might cause migration of constituents of concern in the Columbia aquifer to the underlying Yorktown-Eastover aquifer, prevent constituents of concern from migrating from the Columbia aquifer to surface water and sediment, and minimize degradation of surface water through source control in shallow aquifer groundwater, waste, surface soil, and sediment.

Mr. Deane explained that the phase II injections would be conducted within St. Juliens Road, and projected a figure showing the planned locations. Nine injection wells were planned for installation within the road to enhance remediation in the area. Preconstruction activities will consist of generation of preconstruction submittals, a preconstruction conference, underground utility locating, and site setup. The site setup/preparation will consist of establishing a staging area for materials, traffic control measures, and marking out the injection well locations.

The injection wells will be installed to a depth of approximately 22 to 32 feet below ground surface, and the bottom 10 feet of the aquifer, where the highest CVOC concentrations are located, will be targeted where CVOC concentrations are higher. The wells will be installed using hollow stem auger method, and completed with flush mount protective covers. The wells will be developed utilizing standard techniques until a minimum of three well volumes have been removed and turbidity is reduced to the extent practicable. After installation, injection well locations will be surveyed to establish final location and spatial parameters.

The injection activities will consist of the following:

- EVO solution will be injected utilizing an injection system/manifold capable of injecting on multiple wells simultaneously. Adjacent wells will not be injected upon to avoid oversaturation of the aquifer.
- Injections will target the bottom 10 feet of the Columbia aquifer
- An estimated 1,800 gallons of EVO will be injected per well, with a total injection volume of approximately 16,000 gallons distributed across the 9 wells.
- The EVO will have a nutrient package included as well as a buffering agent to ensure that the pH levels in the wells remain above 6.5.
- Injections will proceed in a manner similar to previous injections at the site. It is assumed that the injection rate will be in the vicinity of 1-2 gallons per minute.
- Upon completion of the EVO injections, a microbial culture will be injected, similar to what was injected at the site previously.
- Microbial injections will occur 4 to 8 weeks after the EVO injections. The timeframe is dependent on when the pH and oxidation reduction potential aquifer conditions are optimal.
- During injection activities, the site will be monitored for daylighting, and injection volumes and rates/pressure will be adjusted as needed to limit daylighting.

Mr. Deane reviewed the schedule for the project and stated mobilization was planned for December 2016, with the microbial injections completed in January or February 2017.

Mr. Deane asked if there were any questions or comments. Mr. Cohen asked how the radius of influence for the EVO was determined. Ms. Jones replied that the radius of influence in the design was based on a general rule of thumb that was field verified during previously conducted injections at the site, and that the radius of influence was reduced to be more conservative for the phase II injections to account for the contamination being closer to the creek.

Mr. Lindsay asked for clarification on how well development is conducted. Mr. Deane replied that a surge block is used to agitate the water column to suspend as much sediment as possible, and then pump the

water and sediment out of the well, so that the well screen is not inhibited by sediment. Mr. Deane stated the process is very similar for drinking water and irrigation wells.

Ms. Doran asked for an explanation of what the injections look like while they are being conducted. Mr. Deane explained that a manifold with tubing coming out of it is used to put the solution down the well, using pressure to conduct the injection.

Roundtable/Question and Answer

Mr. Bell began the roundtable by discussing the path forward for RAB meetings. He noted the current Community Involvement Plan states the RAB meeting frequency will be reduced to once per year following Construction Completion. Mr. Bell explained now that construction is complete, there is much less ERP activity at the facility, and no major ongoing projects since all of the sites have remedies in place. He further explained any work conducted will likely be minimal and consist of follow-up activities and maintenance. Mr. Bell stated the current RAB meeting schedule and structure is for the RAB to meet twice a year; one meeting consisting of an informational meeting at the library in May, and one meeting consisting of a site visit in November. Mr. Bell asked for feedback from the RAB members as to whether they would prefer to continue to meet twice a year, or if they would prefer to change the meeting frequency, and what format for the meetings, site visit or sit down meeting, was preferred. Mr. Mann stated that everyone generally seems to enjoy the site visits. Mr. Bell agreed but indicated there would not be much change or activity to see during the site visits. Mr. Mann suggested continuing to meet twice a year with one meeting consisting of a site visit, and there was general concurrence amongst the RAB members. Mr. Bell stated the RAB would continue to meet twice a year, and a site visit would be included.

Mr. Bell asked if there were any additional questions or comments. Ms. Burns asked if the Department of the Navy (Navy) would continue using cleanup levels that are not safe when evaluating the emerging contaminants, or if the Navy would use more ethical concentrations for comparison. Mr. Bell asked Ms. Burns for clarification on her question. Ms. Burns explained it was well-known that the levels the government uses are not safe and 10 years down the line the government figures that out and asked if the Navy would be using more ethical concentrations. Mr. Bell explained that the criteria used is based on risk information. Mr. Stroud stated the levels are not arbitrary, they are based on science. He explained that they evolve as the government learns more information about contaminants. Mr. Bell explained that part of the Five-Year Review process is to evaluate if new levels/criteria are available and should be considered, and the Five-Year Review evaluates if the ongoing RAs are still protective of human health and the environment. Mr. Lew asked if there were different levels for different types of cleanup such as industrial versus a community garden. Mr. Stroud and Mr. Bell responded that there are. Mr. Bell explained that there are both industrial and residential criteria, and the residential criteria is more conservative and factored in for potential future unlimited site use.

Ms. Jones noted a potential topic for the next RAB meeting could be an update on the emerging contaminants investigation.

Ms. Brumbaugh asked what the future use of the land is at the facility. Mr. Bell stated that there are currently no changes planned from the current use of the facility.

Mr. Bell asked if there were any additional questions or comments, and there were none.

Next Meeting

Mr. Bell indicated that the next RAB meeting is scheduled for May 2017, and the meeting will consist of a site visit.

Meeting Adjourned