

Cold Regions Research and Engineering Laboratory (CRREL)

Restoration Advisory Board (RAB) Meeting Minutes

January 15, 2025, 1600 HRS

Hybrid Meeting: Held In-Person at the Richmond Middle School Library and Virtually, via Microsoft Teams

Attending:

Christopher Kane (USACE-NAE)	Whitney Sauve (USACE) (virtual)
Amy Rosenstein (USACE-NAE)	Laurie Haines-Eklund (USAEC) (virtual)
Samuel Beal (CRREL)	Roberto Rivera (USAEC) (virtual)
Terry Harwood (CRREL)	Wolfgang Calicchio (WSP)
Bree Carlson (Dartmouth)	Jack Besse (WSP)
James M. Wieck (GZA)	Bryan Connolly (WSP)
Roelof Versteeg (Community Member)	Flynn Dorn (WSP)
Rene Nahlik (NHDES)	Kathryn Sarsfield (WSP) (virtual)
Richard Spiese (VTDEC) (virtual)	

Presentation file: 2025_01_15 CRREL_RAB_Meeting_Final.ppt

Mr. Christopher Kane of the United States Army Corps of Engineers-New England District (USACE-NAE) called the meeting to order at 1600 hours on January 15th, 2025. Mr. Kane welcomed Dr. Samuel Beal to the RAB as the replacement deputy installation restoration program manager for CRREL. He welcomed everyone to the RAB for CRREL Remedial Investigation/Feasibility Study (RI/FS) project.

Last update since September 18th 2024. Have not had any increased readings or detections of Trichloroethene (TCE) since last meeting. Mr. Kane requested the meeting attendees introduce themselves and their role and association with the project.

Mr. Kane summarized the meeting agenda and noted that a new contract was awarded to WSP for the project which will provide the means to conduct the RI/FS work at the site going forward.

Mr. Kane motioned to approve the September 18th, 2024, RAB meeting minutes, the motion was seconded by Mr. Versteeg and approved unanimously by the RAB members.

Mr. Jack Besse began the presentation with a brief history/background of TCE use and releases at CRREL, notably at Areas of Concern (AOCs) 2 and 9. Mr. Besse gave a simple overview of the conceptual site model (CSM) and explained how the soil gas plume interacts with the groundwater plume, diffusing through soil vapor and allowing contaminant migration to the water table, particularly in areas of high soil/soil vapor concentration. Soil vapor extraction (SVE) pilot testing resulted in the removal of approximately 3,600 kilograms (kg) of TCE and had significant impacts on groundwater TCE concentrations.

Mr. Besse then discussed On-Site Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Investigation Status next steps. The On-Site FS was finalized in December

2020. Based on New Hampshire Department of Environmental Services (NHDES) comments regarding Applicable or Relevant and Appropriate Requirements (ARARs), an addendum to the On-Site FS may be needed before proceeding with the On-Site Proposed Plan. Mr. Besse noted NHDES is evaluating the On-Site FS in conjunction with reviewing the Connecticut (CT) River RI Report as part of a holistic review of the Site. Once NHDES comments associated with the CT River RI review are resolved, an On-Site Proposed Plan and Record of Decision will follow thereafter. Mr. Besse encouraged the RAB to generate public involvement with the proposed plan/remedy process.

Mr. Besse stated that Vermont Department of Environmental Conservation (DEC) approved the CT River RI Report as final in July 2023. Once NHDES comments are resolved, a draft CT River FS will be prepared for review and submittal to all relevant parties.

Mr. Besse stated the Administrative Record is available for review in the CRREL library, the CRREL SharePoint site, and the Howe Library in Hanover. Mr. Besse noted recent groundwater reports are the only additional final documents set to be added to the Administrative Record during the next update.

Mr. Besse presented on planned upcoming work. Regarding indoor air, Mr. Besse stated HAPSITE® monitoring of the Main Lab, Frost Effects Research Facility (FERF), and Logistics Management Office (LMO), as well as additional CRREL buildings, will continue as normal. WSP plans to complete a second round of sampling of all indoor air spaces in winter/spring 2025. Restarting/expanding of VaporSafe® monitoring is tentatively planned for Summer 2025. Roof sampling and analysis, with the goal of assessing whether TCE is absorbed into roofing materials, is planned for Winter/Spring 2025. The Plenum Study Approach and Work Plan is planned for Spring 2025 and is designed to determine the plenum space layout, identify airflow pathways, and inform potential mitigation actions. Finally, Mr. Besse stated CRREL/USACE-NAE is currently planning the removal of the TCE impacted glycol that was discovered in a pipe within the Mechanical Room.

Mr. Versteeg asked for clarification on the TCE believed to be absorbed into the material in the roof of the Main Lab. Mr. Besse stated the roof is composed of four (4) different layers of materials. Analytical results have been inconsistent between sampling events, likely due to the difference in recovery between different sample prep/extraction and analytical methods. WSP and USACE-NAE have developed a new method using in-house extraction and analytical tools to attempt to assess the total TCE mass absorbed by the material. This process, in tandem with the plenum study, may help determine whether the TCE detected on the second floor of the Main Lab is coming from the roof materials or moving through an as-yet unidentified pathway.

Mr. Versteeg asked if the highest levels of TCE in the Main Lab have been detected on the second floor. Mr. Besse replied that is generally true now as the sub-slab depressurization system (SSDS) mitigates TCE vapor intrusion in the basement and that source mass removal during Soil Vapor Extraction (SVE) pilot testing had reduced vapor intrusion potential into the Main Lab. There was a brief discussion of the plenum space and past attempts to identify pathways, including an exhaustive review of pipe chases, the inside of pipes, and closet spaces.

Ms. Sauve noted that a two (2) order of magnitude decrease of TCE in groundwater has been observed due to the decrease in source mass from SVE and also treatment over time from the groundwater treatment system.

Mr. Besse continued presenting upcoming work. Quarterly sampling of Groundwater Management Zone (GMZ) wells will proceed as scheduled, with the first-round of 2025 groundwater sampling commencing the day of this meeting, and additional rounds planned in April and July 2025. Mr. Besse stated results from previous rounds of sampling have been consistent, and the team doesn't have reason to expect any major variability in future sampling events.

Mr. Besse stated the Synoptic Soil Gas/Rebound August 2023 Report is in the process of being finalized. As previously discussed, the next round of SVE pilot testing is pending task award to proceed in the summer of 2025. This test will be designed to look for potential connections between the second floor/plenum and the subsurface. Mr. Besse noted this effort will likely remove additional source mass as a secondary benefit. Additionally, another round of Synoptic Soil Vapor sampling is tentatively scheduled for Spring/Summer 2025.

Ms. Sauve noted the initial SVE pilot test found that after a certain amount of source mass was removed using SVE treatment previously, there was a reduction of TCE in the indoor air, but after that point, the SVE and indoor air concentrations did not appear to be connected, but we will see what happens again with the upcoming pilot testing as reductions in TCE source mass will diminish with additional SVE treatment..

Mr. Besse stated the On-Site FS is pending NHDES comment resolution, and that the CT River RI will be made final after incorporating NHDES comments once they are received. WSP will submit a revised Draft CT River FS after the RI is finalized for USACE-NAE Review. Once comments are resolved on the On-Site FS the On-Site Proposed Plan and Record of Decision will be prepared, and a public meeting will be conducted during the On-Site Proposed Plan comment period. Mr. Besse encouraged members of the public to engage with this process.

Mr. Besse stated the treatment plant design was paused at 60% and remains on hold pending completion of the Record of Decision. The 60% design will need to be revised based on new locations, data, and requirements. The groundwater extraction pilot work plan is scheduled to be completed in 2025 and will be designed to investigate aquifer characteristics and provide design clarification for the final treatment plant design. Mr. Besse noted the new treatment plant will extract from the upgradient aquifer rather than the esker material that is hydraulically connected to the CT River, reducing the amount of water needed to capture the TCE-impacted groundwater compared to the existing system.

Mr. Besse turned the meeting back to Mr. Kane. Mr. Kane noted a 6-month tray air stripper pilot test is currently underway to test methods to optimize TCE removal efficiency and reduce operating effort and cost. Mr. Kane also noted that several other efforts to maintain and improve performance of the groundwater treatment plant and SSDS are planned, including the replacement of greensand filter media, pump and motor replacements, and granular activated carbon replacements.

Ms. Nahlik inquired about the total anticipated extraction rate to achieve plume capture with the new plant. Mr. Besse stated that the team is unsure, and that the pilot testing is planned to answer that question, but when pressed to make a guess, answered that his personal belief is 60-70 gallons per minute, assuming the 5 wells identified in the initial work plan and guided by the current groundwater model are sufficient to fully capture the TCE-impacted groundwater.

Mr. Versteeg asked which model is used for predicting extraction well capture. Mr. Besse responded he was unsure but would send Mr. Versteeg additional information on the current groundwater model.

Mr. Kane offered time for any additional questions or comments, but seeing none, adjourned the meeting at 1645 hours and thanked the group for taking time out to come to the RAB.