

9/19/2018

**United States Army Corps of Engineers – New England District  
Cold Regions Research and Engineering Laboratory (CRREL)  
Restoration Advisory Board**

**Minutes of Meeting #22**

**Wednesday, September 19<sup>th</sup>, 2018  
Richmond Middle School (RMS) Library  
Hanover, New Hampshire**

Attending: Scott Calkin – Wood – [Scott.Calkin@woodplc.com](mailto:Scott.Calkin@woodplc.com)  
Darrell Moore (Chair) – USACE - [Darrell.A.Moore@usace.army.mil](mailto:Darrell.A.Moore@usace.army.mil)  
Ken Richards – NHDES – [Kenneth.Richards@des.nh.gov](mailto:Kenneth.Richards@des.nh.gov)  
Kristine McDevitt – Community Member – [Kristinemcd@hotmail.com](mailto:Kristinemcd@hotmail.com)  
Glen Gordon - Wood – [Glen.Gordon@woodplc.com](mailto:Glen.Gordon@woodplc.com)  
Chief Martin McMillan – Hanover Fire Dept. [Martin.McMillan@hanovernh.org](mailto:Martin.McMillan@hanovernh.org)  
Roelof Versteeg – Community Member – [Roelof.versteeg@gmail.com](mailto:Roelof.versteeg@gmail.com)  
Tim McNamara – Dartmouth College – [Timothy.j.mcnamara@dartmouth.org](mailto:Timothy.j.mcnamara@dartmouth.org)

Observing: Terry Harwood – CRREL – [bartlett.harwood@usace.army.mil](mailto:bartlett.harwood@usace.army.mil)  
Gary Pasternak – CRREL  
Larry Cain- USACE – [Larry.Cain@usace.army.mil](mailto:Larry.Cain@usace.army.mil)  
Jeffrey Pickett – Wood – [Jeffrey.Pickett@woodplc.com](mailto:Jeffrey.Pickett@woodplc.com)  
Jack Besse - Wood – [Jack.Besse@woodplc.com](mailto:Jack.Besse@woodplc.com)

Agenda:

- Review/Accept May 9<sup>th</sup>, 2018 Meeting Minutes
- Remedial Investigation Report Status
- Feasibility Study Report Status
- SVE Pilot Testing – Enhanced Permeability Status, Operation and Rebound
- Rivercrest/Dartmouth Properties Soil Gas
- Richmond Middle School Soil Gas Sampling and future Schedule for Indoor Air Sampling
- FERF VI Investigation
- Schedule next meeting and adjourn

Items comments and notes:

US Army Corps of Engineers New England District (COE NAE) led by Darrell Moore calls meeting to order at 16:05, minutes from previous meeting are reviewed and accepted.

COE NAE summarizes the agenda for the meeting and provides an update on the status of the RI/FS. The RI has been finalized, and the Feasibility Study Draft is in internal COE review. The contract the RI/FS

work is being performed under is expiring and will be transferred to a newer contract, which may cause a delay to finalize the FS.

Wood personnel provide an update on the Soil Vapor Extraction (SVE) Pilot Test. The AOC9 System has been off since April, and a rebound phase is being observed. It is reported that there has been no significant rebound observed since, monitoring is ongoing.

NHDES asks how the performance of the two systems compare to each other.

Wood personnel state that rebound studies have been performed on each system, and neither have displayed significant rebound after shutdown. A larger volume of TCE was pulled from AOC2, but both areas have seen soil vapor concentration drops of several orders of magnitude.

Mr. Versteeg asks if there is a way to determine the mass of contaminant removed when using VGAC as an emission control. Wood personnel state that using system influent concentrations, that are measured biweekly, and flow rate, the mass removal can be calculated.

Wood personnel provide an update on Dartmouth Properties soil vapor sampling in August 2018. Dartmouth Housing soil vapor was low-level at all points, but highest at depth. Dartmouth Rivercrest property soil vapor levels are comparable with previous sampling events.

Chief McMillan asks whether a shutdown of AOC2 might impact concentrations on the Rivercrest property. Wood personnel respond that it is possible that a rebound over time could see the soil vapor levels rise on the Rivercrest property, but the lack of significant rebound during rebound studies suggests that the impact would not be substantial.

Ms. McDevitt asks if the low readings have been communicated to Dartmouth Housing residents. COE NAE responds that the information is passed along to Dartmouth but does not know the extent to which the information is passed on to residents.

COE NAE discusses the plan going forward at the Richmond Middle School. Indoor air and Sub-slab sampling will take place December 2018, April and August 2019, and August 2020. The sampling would then move to the 5-year review cycle.

Ms. McDevitt asks if that will include soil vapor sampling. COE NAE responds that it will not be a part of the events discussed but will likely take place as warranted as part of the investigation to monitor the vapor plume and performance monitoring of the SVE pilot. Wood personnel display the soil vapor data at the Richmond Middle School from May 2018 that was presented to the SAU 70 school board, discussing the reduced levels found on school property.

Mr. McNamara asks if soil sampling had been conducted at the gravel pit to the west of the Rivercrest Property. Wood personnel state that they have not but that it may have been done by a contractor hired by the property owner.

Wood personnel discuss the recent findings from the FERF investigation. Personnel state that the eastern side of the FERF display classic VI behaviors. Vapor monitoring wells were installed and sampled in proximity to problem areas of the building. Samples contained enough TCE to suggest that VI is plausible.

NHDES asks whether the FERF investigation is now complete. Wood personnel state that the problem areas have been found and there is now reason to believe the problem is VI, and follow-up testing will be completed to confirm pathways and extent before mitigation plans are finalized.

Perched water is suggested as a potential source in the shallow soils. COE NAE explains that the water treatment plant was leak tested as a result, but that no leaks were discovered.

NHDES asks whether a separate report on the FERF may be warranted, as the RI has already been finalized. COE NAE states that a report is in the works.

COE NAE summarizes future work including:

- Feasibility study is currently under internal COE NAE review
- Continued evaluation of FERF Indoor Air, including more synoptic IA rounds under varying atmospheric conditions
- Healthmate filter changeouts beginning October 19<sup>th</sup>
- AOC2 SVE Pilot Test continuing for next 6 months
- AOC9 rebound study ongoing

COE NAE Proposes next meeting to take place in January.

Meeting adjourns at 1710 hours.