

**Former Pease Air Force Base (AFB)  
Restoration Advisory Board (RAB)**

**October 5, 2016**

6:30-8:30 p.m.

Location: NH Department of Environmental Services (DES) Conference Room  
222 International Drive, Suite 175 Portsmouth, New Hampshire

**Meeting Summary**

**RAB members present:** Susan Chamberlin (Portsmouth resident), Ted Connors (Newington resident), Mike Daly (USEPA), Peggy Lamson (Newington resident), Peter Forbes (Air Force and Department of Defense Co-Chair), Brian Goetz (City of Portsmouth), Scott Hilton (NHDES), Kim McNamara (City of Portsmouth), Christine Miller (Dover resident), Jameson “Jamie” Paine (community member and Community Co-Chair), Gene Schrage (Portsmouth resident), Andy Smith (community member), Maria Stowell (Pease Development Authority).

**Meeting support staff present:** Ona Ferguson (RAB Facilitator, Consensus Building Institute), Armando Perez (AFCEC Public Affairs), Linda Geissinger (AFCEC, Public Affairs), Scott Johnston (Sytsma Group, Public Affairs support contractor), Mike Quinlan (CB&I), Rob Singer (AMEC/Foster Wheeler, AFCEC remediation contractor), Breanne Smith (Cherokee Nation Public Affairs support contractor).

**Others attending:** Libby Bowen (AMEC/Foster Wheeler, AFCEC remediation contractor), Alayna Davis (Dover resident), Bud Fitch (Senator Ayotte’s office), Melissa Helton (AMEC Foster Wheeler), Connor Jennings (Senator Sheehan’s office), Tarek Ladaa (CB&I), Arnold Lorange (Michigan resident), Robert Moriarty (Air Force Civil Engineer Center, Dir. CI), Kelsey O’Neil (USEPA), Jim Ropp (Stratham resident), Peter Sandin (NHDES), Steve TerMaath (Air Force Civil Engineer Center, Div. Ch, CIB), Lytle Troutt (AMEC Foster Wheeler), Mike Jalbulin (Massachusetts resident), Steve Woodard (Emerging Compounds Treatment Technologies).

**Next Meeting:** Likely in January 2017

**Action Items:**

- Project staff will revise and send out a new draft of the RAB operating procedures for final approval via email by RAB members.
- Project staff will plan the next RAB meeting with input from the co-chairs.

**Welcome, Introductions and RAB Administrative Items**

The facilitator welcomed everyone to the Pease Restoration Advisory Board and got RAB member approval of the April meeting summary. All meeting participants introduced themselves. The facilitator indicated where and how to provide public comment later in the meeting. RAB members were provided with draft RAB Operating Procedures (September 20,

2016), and copies of the presentation slides. All RAB meeting materials can be found online at <http://www.afcec.af.mil/Home/BRAC/Pease>

### **Pease 2016 Fieldwork Activities Snapshot**

Mr. Forbes, Air Force, began the review of this year's fieldwork by presenting a brief history of environmental restoration at Pease (underway since the 1980s) and the Pease Restoration Advisory Board (see Attachment 1). He provided a broad overview of the fieldwork performed by CB&I under the restoration program in 2016, which included:

- 110 Groundwater wells installed, including 26 permanent monitoring and/or injection wells and 84 temporary wells for remedial injections.
- Groundwater treatment at 6 sites, including In-situ enhanced bioremediation and In-situ chemical oxidation.
- 1,907 samples have been collected (348 PFCs), including sediment, surface water, groundwater, soil vapor/indoor air and soil.
- 42 documents were prepared, including 3 PFC documents.
- 14,778 man-hours in 2016, excluding sub-contractors.

Mike Quinlan, CB&I, presented an update on the restoration program underway at Pease (see Attachment 1). He discussed some of the fieldwork conducted in 2016, showing sites using biological enhancement and chemical oxidation to treat TCE, Jet fuel related compounds, benzene, naphthalene and chlorobenzenes in groundwater at Sites 32, 49, 22, 10 and 36 and Plume 41 (see slide 7). He then summarized work that is planned for the next few months, including Soil Vapor Extraction (SVE) to address contamination under the largest hanger on Base.

RAB members shared comments and asked clarifying questions about the restoration program, with answers provided by project team members indicated here in italics:

- Were the contaminants dealt with 30 years ago destroyed, or were they transported elsewhere? Mr. Forbes responded: *The contaminants found initially were addressed in a number of ways. Some break down naturally, and some break down as a result of an intervention like the ISEB and ISCO injections that were done. Other contaminated areas were excavated and soils were disposed of in a landfill on the former base.*
- Are the standards more or less stringent for cleanup of a federal site (under the Federal Facilities Agreement) than, for example, the standards at somewhere like the Coakley Landfill? Mr. Forbes responded: *Landfills are licensed to accept waste at certain levels of contamination, which anyone including the Air Force must follow when disposing of waste.*
- Considering current treatment procedures that are done in-situ (on site, in place), are the materials being used something that could be released into the environment and cause additional contamination? What "bugs" and what chemicals are being used in current water treatment practices? Mr. Forbes responded: *The "bugs" are bacteria that*

*are adapted to metabolize the types of contaminants that are found at the site. When those chemicals have been depleted, the bacteria die off. Chemical techniques oxidize and/or reduce the contaminants. The chemicals are also depleted in the process, and the byproducts of the reaction are benign. So no, these procedures should not cause future contamination.*

- Why is in-situ treatment used? Is it more cost-effective, convenience or effective? Mr. Forbes responded: *In contrast to moving water or soil to another venue to treat it, in-situ treatment is generally cheaper and it does not harm infrastructure or buildings above the treatment site.*
- Is Site 39, which was mentioned, the building where the airshow was held? Yes.
- Might vapor intrusion in the building at Site 39 pose a risk to the public, since the public uses that facility? Mr. Forbes responded: *There was one elevated sample in one of the office spaces. The testing in the open spaces has shown air quality levels that are well below the screening level.*
- Most of these cleanup efforts have been underway for two decades or more now. Is there an end in sight? Mr. Forbes responded: *The end date for each cleanup effort varies from site to site. There are some sites that are close to being finished and some that will still take decades of work. We don't have an estimate at this time of when they will all be completed. For those sites where remediation will take many more years, the team will continue to work to speed up the process as technology and techniques advance.*
- Are there concerns about migration of contaminants at this point? Mr. Forbes responded: *The migration of the contaminants is under control.*

### **PFCs at Pease**

Peter Forbes, Air Force, Mike Quinlan, CB&I, and Rob Singer, AMEC/Foster Wheeler and AFCEC remediation contractor, presented an update on the PFC cleanup program in place at Pease (see Attachment 1). Included was an update on progress being made:

- The City of Portsmouth has initiated PFC treatment on the Smith and Harrison wells.
- The Air Force has continued to sample the Smith, Harrison, Portsmouth and Collins wells.
- The Pease Fire Training Area (FTA) groundwater treatment system was modified and re-activated in the fall of 2015.
- In May 2016, the EPA issued a new lifetime health advisory for drinking water, which is now 70 parts per trillion for PFOS, PFOA and PFOS/PFOA combined.
- In May 2016, the NHDES issued Ambient Groundwater Quality Standards for groundwater: 70 parts per trillion for PFOS, PFOA and PFOS/PFOA combined.

RAB members shared comments and asked clarifying questions about PFCs, with answers provided by project team members Peter Forbes, Mike Quinlan and Rob Singer here in italics:

- Are the low PFC results in the data from coconut carbon or coal carbon treatment? Mr. Quinlan responded: *The good PFC reduction results come from a system that uses both:*

*the coconut is in the first vessel and the second and third vessels are the coal-based (see slide 26).*

- Are private Newington wells with PFC contamination above certain levels all on septic systems? Ms. Lawson responded: *Yes, all residential wells are septic.*
- Where does the water go after being treated (at Site 8)? Mr. Quinlan responded: *It's re-injected back at the site.*
- Are the filters destroyed after they are used? Mr. Quinlan responded: *Yes.*
- Has the Haven Well been activated at all since it was taken off-line? Mr. Goetz responded: *No.*
- Do this year's drought conditions have any effect on the various PFC concentrations, treatments and remediation process? Mr. Singer responded: *We have not seen any change in PFC concentrations this summer. PFC concentrations look very consistent in the monitoring results from the past three years.*
- Is there a plan to update the treatment system at Site 8? Is this an area where an incinerator could be installed? Mr. Forbes and Mr. Singer responded: *There is no plan to change the treatment system. The project is focused on containing and filtering the water. Incineration would be problematic for several reasons, so is not under consideration.*
- How do the cost of the resin and carbon treatments compare? Mr. Singer responded: *It's about a 15 percent higher capital cost for the resin system over the carbon treatment system. Money is saved on the operation and maintenance, and over time the resin system starts to pay for itself.*
- Could the resin treatment service the drinking water supply in addition to the groundwater? Mr. Woodard responded: *In places with very low levels of PFCs, it doesn't make sense to put a regeneration system in. It's a quick payback to go with resin over carbon.*
- New Hampshire DES regulates drinking water in NH. Has the Air Force been in contact with NHDES to get input or feedback? Mr. Woodard responded: *Yes, there has been discussion.*
- Projects in this region have used the NHDES-approved process so far. Has NHDES given this alternative method (resin) its blessing yet? Mr. Woodard responded: *The resin has been around for a while, it is drinking water approved, and it has been used for nitrate removal and other more traditional compounds for years. It's no different than passing the water through carbon.*  
Has the discussion with the state regarding PFCs occurred? Mr. Woodard responded: *Yes, we've talked.*
- Is resin a petroleum product? Mr. Woodard responded: *It is a plastic product.*
- Are there more natural materials that could be used for these filtration systems rather than coal or plastic based? Mr. Woodard responded: *Resin is used over and over for years, which makes it very efficient and high performing. The solvent is distilled and reused, so you can't do much better than that.*

- Is the project planning to put more than one treatment facility at Site 8? Mr. Forbes and Mr. Singer responded: *The Air Force is designing two different treatment plans right now. Site 8 is going to be updated to take advantage of the resin technology. The immediate action the Air Force is taking is to protect the water supply, so a lot of the focus is on cutting off the migration of PFCs. The rest of the program will follow in time as part of the regular cleanup process.*
- Is there progress toward using alternative firefighting foam that doesn't have the current chemical makeup? Mr. Forbes responded: *I'm not really an expert on this. Anecdotally I can say that we know the current formulation is being changed over. A process is underway to remove the current supply and replace it with a reformulation that doesn't have PFOS and PFOA in it. I'm pretty certain that Pease will be high on the list of places receiving the new formulation. This is indirect information; I'm not really in the loop on that.*
- Are the injections on slide 11 at the Haven well? Mr. Forbes responded: *No, it's quite a distance away.*

### **Public Comment Period**

Members of the public were provided the opportunity to share thoughts with the RAB. Two people had comments to share; one submitted hers in writing beforehand to Mr. Paine.

#### Alayna Davis

1. On slide 18; PFC concentrations in the water have not changed because the analysis of the water after treatment has not yet been completed, correct? Not because the treatment has failed to produce results. *Mr. Forbes said yes, the data is from the ongoing monitoring around the public drinking water wells, and the data from the water that has gone through the treatment system has been collected but has not yet been processed.*
2. When you compared the Site 8 performance, what is the "carbon change out"? Is that when you change the filter? *Mr. Forbes said yes, that is the change out of the filter media.*
3. Starting on slide 23, when you compare the different levels of PFCs, the carbon change out date differs in different tables. *Mr. Quinlan said the change outs happen every three to four weeks and they should be the same on each graph. If the dates are different that's a mistake.*
4. Is there a reason that there was a quicker change out after May 26 and after June 22? *Mr. Quinlan stated that the frequency of the change out was increased because the redevelopment of the well almost doubled the volume of water being pumped. The increased volume required a three-week instead of a four-week change out.*

5. When Steve Woodard was talking, you mentioned Long Island, Colorado and New Jersey. Are those the places where the resin treatment has already been tested? And has the resin treatment been tested with PFCs or other contaminants? *Mr. Woodard, Emerging Compounds Treatment Technologies, stated that the resin treatment is used in those places for PFCS and testing is in progress.*
6. Is there any data online about the testing results? *Mr. Woodard replied that the results are not yet posted, but when the studies are done the results will be public.*

Andrea Amico (read by Jamison Paine)

1. What is the update on the testing of wildlife in the area surrounding Pease to assess PFC exposure?  
*The Air Force is focused on human exposure to PFCs through drinking water and has not tested any wildlife in the Pease vicinity. The health advisory is for drinking water. The Air Force relies on the Center for Disease Control and the Agency for Toxic Substances and Disease Registry to address health concerns and actions and will support recommended activities to the extent allowed by law.*
2. Has the Air National Guard informed the former and current service people of ongoing PFC blood testing available to the community offered by the New Hampshire DHS? I asked about the Air National Guard informing service people at the April RAB meeting, but the response I read in the draft minutes only addressed the Air Force's efforts to notify former service people. I would like clarification from the Air National Guard as to their actions to notify former service workers, as I have heard from a former Air National Guard serviceman who lives out of state and was notified by a friend about the blood testing, not by the Air National Guard.  
*RAB member Andy Smith responded that it is the Air Force's BRAC agency's responsibility to notify current and former members of the Air National Guard of this issue. Though he has been a part of the Guard for years and is currently a civilian, he was not notified. He looked into this and learned that SAFIE Lt. Col. Gilliam had the task sent to National Guard Bureau Personnel and Services (NGBA1) to get names and addresses for Guard military and civilian members. NGBA1 said we had personnel names, but not addresses and to go to the Defense Manpower Data Center (DMDC) in California for addresses. He then learned via email that because of time constraints, the Air Force was unable to access these addresses of Air National Guard members. They identified addresses for and sent letters to only 2,000 of 6,000 people that they had names for. They testified to Congress in October 2015 that they did their due diligence to contact Air National Guard members. Lt. Col. Gilliam's email to my wing commander yesterday stated the task will be reopened and the Air National Guard will be notifying former and current military members at the base.*

*The Air Force is working with regulators, city and state officials and other stakeholders to continually adapt our response to this emerging concern and develop long-term cleanup strategies in accordance with federally mandated processes. SAF/IEE is the lead on providing notifications to current and former members of the ANG stationed at Pease ANG Base. SAF/IEE was provided a list from NGB and thus provided it to AFCEC for distribution in November 2016. The notification was sent to approximately 2,580 ANG members based on the list provided by NGB. AFCEC will continue to work with SAF/IEE to provide notifications to current and former ANG members and is committed to being transparent in its handling of PFOS/PFOA-related issues and related information. The public notice will also be made available through AFCEC's website for future reference. AFCEC is committed to maintaining an open dialogue with communities, regulators and other stakeholders and if there are any future updates involving PFOS/PFOA-issues with former Pease AFB.*

3. What other former Air Force bases across the country have discovered PFC contamination in their drinking water, and what are the plans at those sites for remediation?

*Preliminary assessments have been conducted at 31 former installations, closed under the Base Realignment and Closure Act. The Air Force is using a comprehensive approach – identify, respond, prevent – to assess the potential for PFOS/PFOA impact on drinking water on and off installations, and respond appropriately. If the Air Force identifies a drinking water source that could be contaminated, it will be tested. When drinking water sample results indicate PFC levels exceed the EPA's health advisory, the Air Force determines an appropriate mitigation action such as providing an alternate drinking water source, filtration system, and/or providing bottled water.*

#### **RAB Operating Procedures**

The facilitator and Ms. Geissinger provided an overview of the current draft of the RAB Operating Procedures. One RAB member suggested adding a goals statement about making a long-term, positive, impact by helping remove the contamination. Otherwise, RAB members indicated that they support the facilitator and staff revising the Operating Procedures and sending them out for final approval then seeking RAB member approval via email between meetings. They would like that procedural step taken care of soon, since it has now been months since the committee first met.

The next Pease RAB meeting is planned for January 2017 (a meeting date will be determined)

The meeting was adjourned at 8:30 p.m.

Attachment 1: SLIDES