Agenda

• Welcome and Introduction – Carri Hulet (Consensus Building Institute)
  - Approve summary from October 2018 RAB meeting
  - Membership Update
  - Discussion & decision on minor revision of RAB Operating Procedures

• Air Force Cleanup Update – Roger Walton (AFCEC)
  - AIMS site and other key project updates since the last meeting

• Non-target Analysis Project Overview – Andrea Amico (RAB member)
  - Overview of Testing for Pease Non-Target Analysis project

• Portsmouth Water Treatment Brian Goetz (City of Portsmouth)
  - Brief update on water treatment activities

• Supplemental Site Inspection Results TBD (Wood E&IS)
  - Presentation of results from supplemental site inspection (SSI) of shellfish, groundwater, etc.
  - Discussion

• Open Discussion Time
  - Opportunity for RAB members to discuss additional topics.

• Public Comments
  - Members of the general public may request up to 3 minutes to speak.

• Meeting recap, upcoming meeting date – Carri Hulet

• Adjourn
RAB Member Administrative Items

• Approve summary from October 2018 RAB meeting
• Membership Update
• Discussion & decision on minor revisions of the RAB Operating Procedures
• Discuss process questions raised by RAB members
Air Force Clean Up Update

Roger Walton
Air Force Civil Engineer Center
• PFOS/PFOA Supplemental Site Investigation
  – Shellfish Sampling (Nov-Dec)
  – Surface Water/Groundwater Sampling (Dec)

• Site 8 IMS
  – Operations continue; first two quarterly reports (Apr - Dec 18) to be merged; draft to AF this week
  – Testing for Pease collected samples for non-target analysis on 6 Dec 18

• Airfield IMS
  – Construction nearing completion
  – Initial operations to begin 1 April 19
AIMS Construction
Activities Since Oct 2018

• Site-Wide PFOS/PFOA Monitoring
  – Semi-Annual sentry well monitoring completed in Nov 18
  – December private well sampling completed
  – March private well sampling being conducted this week
  – Monthly municipal well sampling on-going

• IRP Sites
  – Proposed Plan for Site 39 (Bldg 227) released for public comment on 20 Feb 19; comments accepted until 30 Mar 19
  – AF proposing additional bioremediation at Site 49 (2 International Drive)
  – AF proposing remedial action completion with continued monitoring at Site 72 (Former Motor Pool)
Highlights (March – June 2019)

- Baseline Performance Monitoring Sampling for AIMS
- City breaks ground at Grafton Road Treatment Plant
- AIMS Operations Begin
- Draft Supplemental Site Investigation Report
- Performance Monitoring for Treatment Systems
- Monthly Municipal Well Sampling
- AIMS Tour and RAB Meeting – June 12th *(tentative)*
Testing for Pease
Non-Target Analysis Project Overview
Andrea Amico
Pease Tradeport
Water Treatment System Update

Pease Restoration Advisory Board
March 7, 2019
Current Pease Tradeport
Grafton Road Water Facility

Hobbs Hill Tank
Haven Well
Grafton Road Water Facility
Harrison Well
Smith Well
Booster from Portsmouth to Pease
Filter Demonstration Project

• Activated carbon in both of the demonstration filters was changed out in November 2018
• Will continue to filter water from Harrison and Smith Wells
• Will also continue to sample and monitor filter performance throughout construction
Non Target Analysis

• Testing for Pease proposed study to City Council at October 1, 2018 meeting
• Began collecting samples after Council agreed to participate
• Five bids received in January 2019
• Kinsmen Corporation of Hookset, NH was low bidder and awarded project
Grafton Road Water Facility Process Schematic
Current Treatment System Design

- Haven Harrison Smith Wells
- Booster Pumps
- Cartridge Filter
- Resin Filters
- Granular Activated Carbon (GAC) Filter
- To Distribution System

Supply Well Capacities

<table>
<thead>
<tr>
<th>Description</th>
<th>Capacity (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison Well</td>
<td>286</td>
</tr>
<tr>
<td>Smith Well</td>
<td>343</td>
</tr>
<tr>
<td>Haven Well</td>
<td>534</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,163</td>
</tr>
</tbody>
</table>

- Chlorine
- Fluoride
- Orthophosphate
Anticipated Construction Schedule

### Milestones:
- Spring 2019 – Begin Construction
- June 2020 – New GAC Filters (switchover of Harrison/Smith Wells)
- Spring 2021 – Startup with Resin/GAC filters (Harrison/Smith Wells)
- Summer 2021 – Haven Well Startup

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
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</thead>
<tbody>
<tr>
<td>Bidding</td>
<td>61</td>
<td>11/15/2018</td>
<td>1/15/2019</td>
</tr>
<tr>
<td>Contract Award</td>
<td>56</td>
<td>1/15/2019</td>
<td>3/12/2019</td>
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<tr>
<td>Notice to Proceed</td>
<td>0</td>
<td>3/12/2019</td>
<td>3/12/2019</td>
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<tr>
<td>Submittals</td>
<td>181</td>
<td>3/13/2019</td>
<td>9/10/2019</td>
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<tr>
<td>Equipment Procurement</td>
<td>224</td>
<td>6/4/2019</td>
<td>1/14/2020</td>
</tr>
<tr>
<td>Phase 1 - Building Addition &amp; GAC Filters</td>
<td>379</td>
<td>6/10/2019</td>
<td>6/23/2020</td>
</tr>
<tr>
<td>Phase 2 - Resin Skid, Cartridge Filters, Booster Pumps</td>
<td>279</td>
<td>5/29/2020</td>
<td>3/4/2021</td>
</tr>
<tr>
<td>Full System Start-Up with Smith &amp; Harrison</td>
<td>48</td>
<td>1/15/2021</td>
<td>3/4/2021</td>
</tr>
<tr>
<td>Phase 3 - Admin Area, Site Work, Haven Well Online</td>
<td>200</td>
<td>10/15/2020</td>
<td>5/3/2021</td>
</tr>
<tr>
<td>Full System Start-Up with Haven</td>
<td>42</td>
<td>3/4/2021</td>
<td>4/15/2021</td>
</tr>
<tr>
<td>Final Completion</td>
<td>4</td>
<td>4/29/2021</td>
<td>5/3/2021</td>
</tr>
</tbody>
</table>
Future Water Quality Monitoring of Haven Well and Pease Tradeport Aquifer

• Meeting in January 2019 with Air Force and regulators about developing a comprehensive water quality monitoring programs for:
  • Required Compliance Monitoring
  • Filter Performance Monitoring
  • Aquifer Monitoring
Thank You

Brian Goetz – Deputy Director of Public Works
City of Portsmouth, New Hampshire
bfgoetz@cityofportsmouth.com
Where are PFOS/PFOA/PFBS coming from and going to?
How and where might people come into contact with PFOS/PFOA/PFBS?
How much is present at those locations?
Are the levels at those locations unsafe?
Screening levels developed for use at Pease by USEPA for PFOS/PFOA/PFBS – November 2017. Results in parts per trillion (ppt)

<table>
<thead>
<tr>
<th>Receptor &amp; Exposure Pathway</th>
<th>Adult</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PFOS/PFOA</td>
<td>PFBS</td>
</tr>
<tr>
<td>Child Recreator (wading – sediment ingestion/dermal contact)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>609,000</td>
<td>609,000,000</td>
</tr>
<tr>
<td>Child Recreator (swimming – surface water ingestion)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2,030</td>
<td>2,030,000</td>
</tr>
<tr>
<td>Adult Recreator (swimming – surface water ingestion)</td>
<td>18,300</td>
<td>18,300,000</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fish Consumption (in fish tissue)</td>
<td>7,220</td>
<td>7,220,000</td>
</tr>
<tr>
<td></td>
<td>5,210</td>
<td>5,210,000</td>
</tr>
<tr>
<td>Shellfish Consumption (in shellfish tissue)</td>
<td>6,780</td>
<td>6,780,000</td>
</tr>
<tr>
<td></td>
<td>5,590</td>
<td>5,590,000</td>
</tr>
<tr>
<td>Composite Worker</td>
<td>1,640,000</td>
<td>1,640,000,000</td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>
Conclusions from Fall 2018:

- Soil, freshwater surface water and sediment are safe for current use based on comparison to screening levels.
- Data gaps identified within freshwater/sediment dataset.
- Concentrations of PFOS/PFOA/PFBS in shellfish were unknown.
- Concentrations of PFOS/PFOA/PFBS in marine surface water/sediment were unknown.
Additional sampling was proposed to:

1) Fill freshwater sediment and surface water data gaps

2) Test concentrations of PFOS/PFOA/PFBS in shellfish, surface water, and sediment within Great Bay and Little Bay
Shellfish Tissue/SW/Sediment Sample Locations – Little Bay/Great Bay
Shellfish Tissue/SW/Sediment Sample Location – Hampton Harbor
Shellfish Tissue Sample Collection Information

- Samples collected in November & December 2018
- One sample is made up of 10 individual shellfish per species
  - Three “replicate” samples were collected at each location when enough individuals were found
  - Some composite/replicate samples contained fewer than 10 individuals
- Clam samples were individuals greater than 2”, oyster samples were individuals greater than 3”
- Mussels were also identified in all sample locations and were also collected
PFOA and PFBS not detected in shellfish
PFOS not detected in reference locations
PFOS concentrations below USEPA risk-based consumption screening levels at four target locations with the exception of one clam field duplicate/replicate
PFOS/PFOA/PFBS shellfish concentrations do not present unacceptable risks to consumers
### USEPA Screening Levels (Target HQ of 0.1)

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Clam</th>
<th>Mussel</th>
<th>Oyster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicate 1 (11/29/2018)</td>
<td>836 J</td>
<td>657 U</td>
<td>587 U</td>
</tr>
<tr>
<td>Replicate 2 (11/29/2018)</td>
<td>748 J</td>
<td>623 U</td>
<td>325 J</td>
</tr>
<tr>
<td>Replicate 3 (11/29/2018)</td>
<td>2,540</td>
<td>653 U</td>
<td>617 U</td>
</tr>
<tr>
<td>Replicate 4 (Clams &gt; 3 *) (11/29/2018)</td>
<td>833 J</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Duplicate/Replicate (11/29/2018)</td>
<td>1,260</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Child Shellfish Consumption (in shellfish tissue)**

- PFOS (ppt): 5,590

**Adult Shellfish Consumption (in shellfish tissue)**

- PFOS (ppt): 6,780
Tricky's Cove (Mouth of Pickering Brook)

<table>
<thead>
<tr>
<th>USEPA Screening Levels (Target HQ of 0.1)</th>
<th>PFOS (ppt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Shellfish Consumption (in shellfish tissue)</td>
<td>5,590</td>
</tr>
<tr>
<td>Adult Shellfish Consumption (in shellfish tissue)</td>
<td>6,780</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>401-30023 (Tricky's Cove - Mouth of Pickering Brook)</th>
<th>Sample Type</th>
<th>Clam</th>
<th>Mussel</th>
<th>Oyster</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/29/2018 &amp; 12/5/2018</td>
<td>Replicate 2</td>
<td>1,190 J</td>
<td>-</td>
<td>396 J</td>
</tr>
<tr>
<td>12/5/2018</td>
<td>Replicate 3</td>
<td>1,820 J</td>
<td>-</td>
<td>299 J</td>
</tr>
<tr>
<td>12/5/2018</td>
<td>Replicate 4 (Clams &gt; 3&quot;)</td>
<td>361 J</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12/5/2018</td>
<td>Duplicate/Replicate</td>
<td>7,570 J</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- **green** indicates PFOS not detected (Method Detection Limit (MDL) shown)
- **blue** indicates Detected concentration below the PFOS screening value
- **yellow** indicates Detected concentration above the PFOS screening value
Herod's Cove (Mouth of Peverly Brook)

USEPA Screening Levels (Target HQ of 0.1)  PFOS (ppt)

Child Shellfish Consumption (in shellfish tissue)  5,590

Adult Shellfish Consumption (in shellfish tissue)  6,780

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Clam</th>
<th>Mussel</th>
<th>Oyster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicate 1</td>
<td>-</td>
<td>595 U</td>
<td>426 J</td>
</tr>
<tr>
<td>Replicate 2</td>
<td>-</td>
<td>653 U</td>
<td>-</td>
</tr>
<tr>
<td>Replicate 3</td>
<td>-</td>
<td>657 U</td>
<td>-</td>
</tr>
<tr>
<td>Duplicate</td>
<td>-</td>
<td>650 U</td>
<td>-</td>
</tr>
</tbody>
</table>

PFOS not detected (Method Detection Limit (MDL) shown)  Detected concentration below the PFOS screening value
Great Bay (Mouth of McIntyre Brook)

<table>
<thead>
<tr>
<th>USEPA Screening Levels (Target HQ of 0.1)</th>
<th>PFOS (ppt)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5,590</td>
</tr>
<tr>
<td>Adult Shellfish Consumption (in shellfish tissue)</td>
<td>6,780</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>401-30025 (Great Bay - Mouth of McIntyre Brook)</th>
<th>Sample Type</th>
<th>Clam</th>
<th>Mussel</th>
<th>Oyster</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/28/2018</td>
<td>Replicate 1</td>
<td>628 J</td>
<td>647 U</td>
<td>331 J</td>
</tr>
<tr>
<td>11/28/2018</td>
<td>Replicate 3</td>
<td>-</td>
<td>644 U</td>
<td>603 J</td>
</tr>
<tr>
<td>11/28/2018</td>
<td>Duplicate/Replicate</td>
<td>-</td>
<td>-</td>
<td>460 J</td>
</tr>
</tbody>
</table>

- **Green** indicates PFOS not detected (Method Detection Limit (MDL) shown)
- **Blue** indicates Detected concentration below the PFOS screening value
Co-located Estuarine Surface Water/Sediment Samples

All estuarine PFOS, PFOA, and PFBS concentrations co-located with shellfish samples were below USEPA recreational screening criteria.

Estuarine surface water and sediment is safe for recreational use.
Additional Freshwater Surface Water/Sediment Samples

Sample locations primarily selected to confirm nature and extent – fill data gaps

Surface water locations with potential access:
- Great Bog – Displaced Population (drinking water)
- Elementary School
- Golf Course
- Pickering Brook Swimming Location
Eighteen additional freshwater samples were collected.

All PFBS concentrations in freshwater surface water were below USEPA screening criteria.

Concentrations of PFOS + PFOA exceeded the USEPA screening criteria (2,030 ppt) at a target HQ of 0.1 at four locations:

- Flagstone Brook at crossing of Arboretum Drive (PFOS + PFOA = 3,560 ppt)
- Pauls Brook at PAFB Boundary (PFOS + PFOA = 3,078 ppt)
- Knights Brook, just downstream of Watering Spring and Pickering Spring (PFOS + PFOA = 2,330 ppt)
- Watering Spring (PFOS + PFOA = 3,500 ppt)

Locations are shallow and not attractive/available to swimming.

All similar to previous detected concentrations.

Great Bog sample 5.9J ppt for PFOA only.
Freshwater Surface Water Overview

All PFBS concentrations in freshwater surface water below USEPA screening criteria
Concentrations of PFOS + PFOA exceeded the USEPA screening criteria (2,030 ppt) at a target HQ of 0.1 at four locations:
- Flagstone Brook
- Pickering Brook (southern section only)
- Pauls Brook at PAFB Boundary
- Watering Spring
No concentrations are above 10 times the screening value (HQ 1.0)

Locations are typically shallow and not attractive to swimming – no evidence of swimming occurring

Freshwater surface water is safe for current recreational use

Flowchart:
- Surface Water
- Ingestion
- 0.12 L/day
- 45 days
- 6 Years
- Child Swimmer
Eleven additional freshwater sediment samples were collected.

All freshwater PFOS, PFOA, and PFBS concentrations in sediment were below USEPA screening criteria.

Previous sediment sampling was also below USEPA screening criteria.

Freshwater sediment is safe for recreational use.
Soil, freshwater surface water and sediment are safe for current use

Marine surface water/sediment are safe for current use

Concentrations of PFOS/PFOA/PFBS in shellfish are safe for consumption
Open Discussion Time

• Opportunity for RAB members to discuss additional topics
Goal: Provide opportunity for members of the public to comment.

Process:
- Public members fill out a comment card if you wish to speak.
- 3 min limit per speaker.
- Speakers will be notified when they have 30 seconds remaining & at the 3 min mark.
RAB Meeting Recap.

• Meeting Recap
• Action Items
• Next Steps
• Next meeting – June 12th (proposed)
Adjournment