

Former Fort Devens Army Installation Project Status Update 16 January 2020

Restoration
Advisory Board
Meeting





Agenda

- Per- and Polyfluoroalkyl Substances (PFAS) Investigation and Sampling Updates
 - ▶ Community Involvement Plan (CIP)
 - ▶ Sampling results for private drinking water wells and community/non-community systems
 - ▶ Sampling results for municipal water supply wells
 - ▶ Municipal water supply well treatment
 - ▶ Remedial Investigation (RI)
- 2020 Five-Year Review





Community Involvement Plan

- Describes the Army's community outreach program regarding the ongoing environmental investigations at Fort Devens
- Draft CIP was submitted for review on Dec 19 to 100 people
 - ▶ Available online (ftdevens.org)
- Schedule
 - ▶ 45-day review period until early February
 - ▶ Draft Final CIP planned for early May
 - ▶ Final CIP planned for mid-June



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Community Involvement Plan
Investigation of Per- and Poly- Fluoroalkyl Substances (PFAS)
Environmental Restoration Program

Former Fort Devens, Massachusetts

DRAFT
DECEMBER 2019



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CONTRACT NO. W912WJ-18-C-0011





Sampling Update for Community/ Non-Community Systems and Private Wells

- Army conducting sampling since 2018
- Regulatory benchmarks
 - ▶ 2016 EPA Lifetime Health Advisory (LHA) guidance value for drinking water
 - 70 ppt (sum of PFOS, PFOA)
 - ▶ 2018 MassDEP Office of Research and Standards Guideline (ORSG) guidance value for drinking water
 - 70 ppt (sum of PFOS, PFOA, PFHpA, PFHxS, PFNA)
 - ▶ Dec. 2019 MassDEP proposed maximum contaminant level (MCL) for drinking water
 - 20 ppt (sum of PFOS, PFOA, PFHpA, PFHxS, PFNA, PFDA)
 - ▶ Dec. 2019 MassDEP GW-1 standard for groundwater
 - 20 ppt (sum of PFOS, PFOA, PFHpA, PFHxS, PFNA, PFDA)





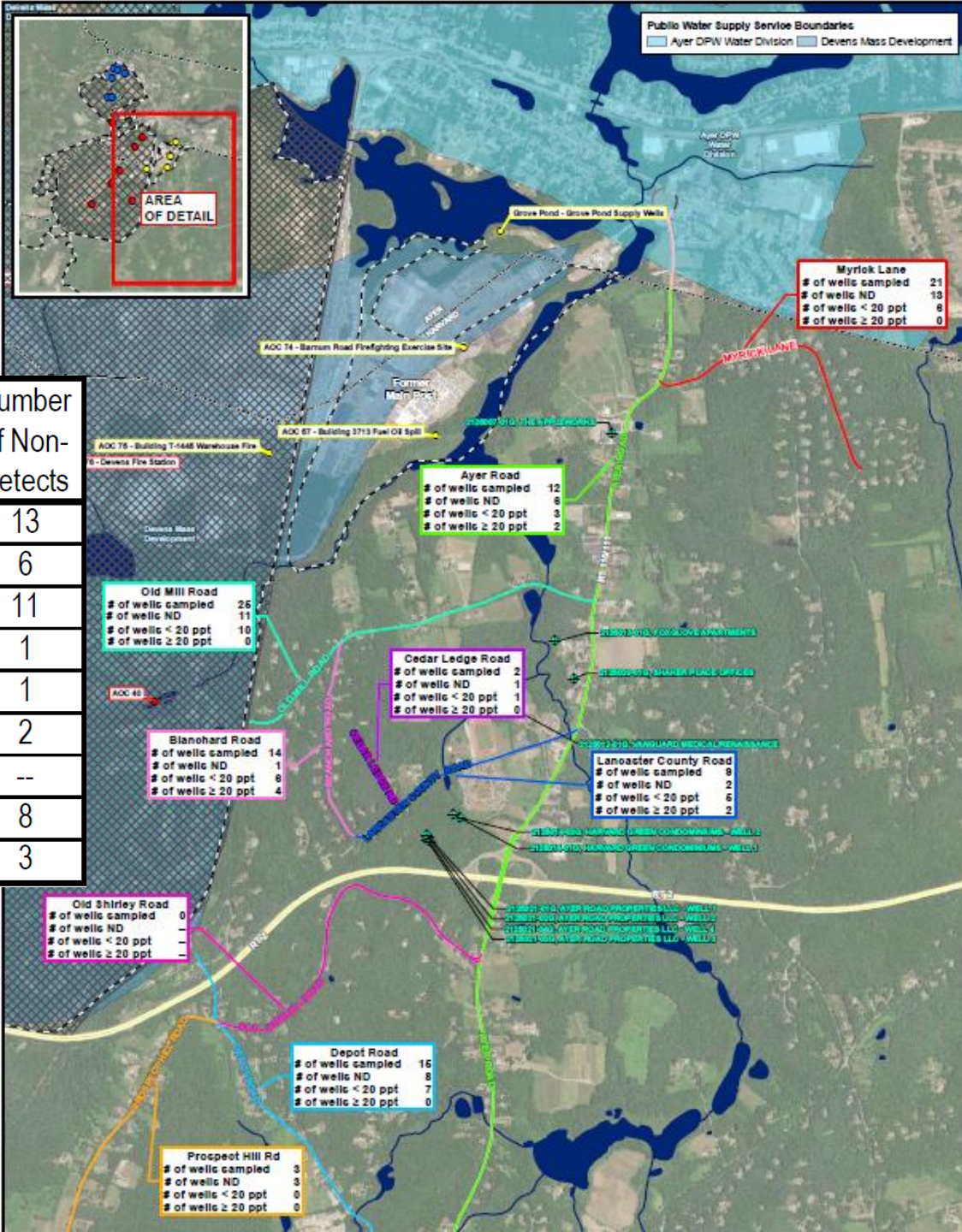
Sampling Update for Community/ Non-Community Systems and Private Wells

- 2018 (summer) – Sampled 21 wells in Shirley & Harvard
 - ▶ PFAS detected in some wells, but below EPA's LHA of 70 ppt and Mass ORSG of 70 ppt
 - ▶ Source of PFAS in the wells is uncertain based on hydrogeology
- 2018-2020 – Quarterly sampling of town water supply wells in Ayer and Devens
- 2019 (spring) – Follow-up sampling of 3 locations in Harvard and sampling 1 location quarterly
- 2019 (fall) – Sampling requested by Harvard Board of Health
 - ▶ Army contacted 196 well owners in Harvard
 - ▶ 101 wells were sampled between October 2019 and January 2020





Sampling of Wells in Harvard



| Location | Number of Wells Sampled | Number Exceeding 20 ppt | Number Detects <20 ppt | Number of Non-Detects |
|------------------|-------------------------|-------------------------|------------------------|-----------------------|
| Myrick Lane | 21 | 0 | 6 | 13 |
| Ayer Rd | 12 | 2 | 3 | 6 |
| Old Mill Rd | 25 | 0 | 10 | 11 |
| Blanchard Rd | 14 | 4 | 6 | 1 |
| Cedar Ledge Rd | 2 | 0 | 1 | 1 |
| Lancaster Cty Rd | 9 | 2 | 5 | 2 |
| Old Shirley Rd | 0 | -- | -- | -- |
| Depot Rd | 15 | 0 | 7 | 8 |
| Prospect Hill Rd | 3 | 0 | 0 | 3 |

No results exceeded the EPA LHA of 70 ppt.
Note: 10 well results are pending.





Well Sampling Update for Community/ Non-Community Systems and Private Wells

- Ongoing sampling in 2019-2020
 - ▶ Harvard private well sampling
 - ▶ Quarterly sampling of Ayer's town wells
 - ▶ PFAS Remedial Investigation (RI) to locate possible source areas and define nature and extent of PFAS contamination associated with the former Fort Devens
- Planned additional sampling in 2020
 - ▶ Sampling private wells north and west of the former Army airfield










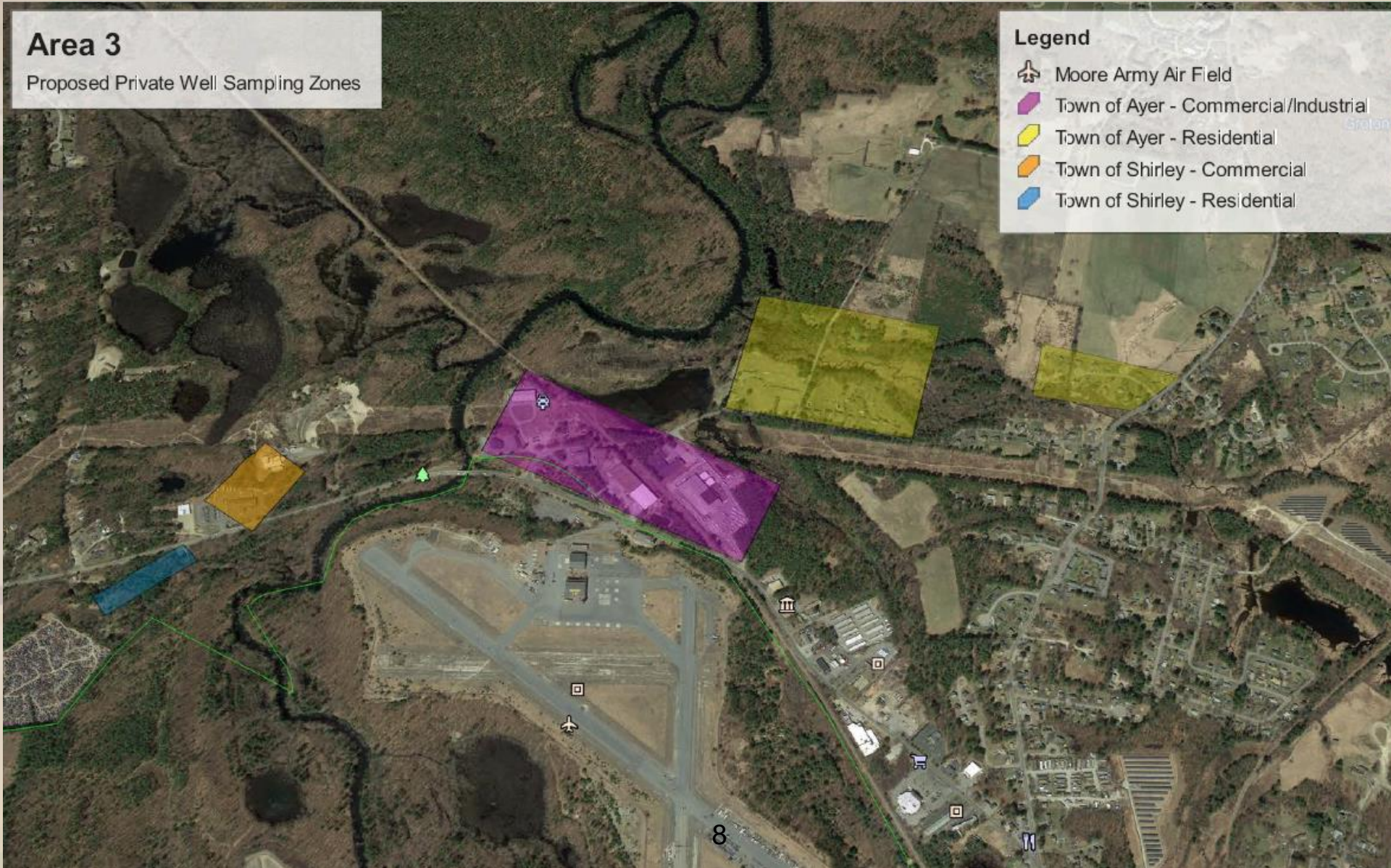
Proposed Private Well Sampling North of Airfield

Area 3

Proposed Private Well Sampling Zones

Legend

-  Moore Army Air Field
-  Town of Ayer - Commercial/Industrial
-  Town of Ayer - Residential
-  Town of Shirley - Commercial
-  Town of Shirley - Residential





Sampling of Municipal Water Supply Wells - Ayer Detections of PFAS, November 2019



| | Grove Pond Wells (ppt) | | | | Spectacle Pond Wells (ppt) | | |
|---------------------------|------------------------|------------|--------------------------------|------------------------------------|----------------------------|------------|----------------------------------|
| | Well 6 | Well 7 | Well 8 (after treatment) | Finished Water (wells 6,7,8) | Well 1A | Well 2A | Finished Water (wells 1A, 2A) |
| | 11/22/2019 | 11/22/2019 | 11/18/2019 | 11/22/2019 | 11/18/2019 | 11/18/2019 | 11/18/2019 |
| NEtFOSAA | ND | 1.13 J | ND | ND | ND | ND | ND |
| PFBS | 2.22 | 2.33 | ND | 1.15 J | 1.79 J | 1.66 J | 1.77 J |
| PFHxA | 16.7 | 50.9 | ND | 8.17 | 2.95 | 23.4 J | 13.4 |
| PFHpA | 10.6 | 43.7 | ND | 5.50 | 1.96 | 10.1 J | 6.19 |
| PFHxS | 6.19 | 13.7 | ND | 2.90 | 4.16 | 2.34 J | 3.48 |
| PFOS | 3.71 | 17.5 | ND | 2.00 | 6.70 J | 6.99 J | 7.77 J |
| PFOA | 12.2 | 32.7 | ND | 6.28 | 7.24 | 10.0 J | 8.91 |
| PFNA | 0.632 J | 1.42 J | ND | ND | 0.509 J | 0.996 J | 0.816 J |
| EPA LHA (70) | 15.9 | 50.2 | ND | 8.28 | 13.9 | 17.0 | 16.7 |
| Mass ORSG (70) | 33.3 | 109 | ND | 16.7 | 20.6 | 30.4 | 27.2 |
| Proposed Mass MCL (20) | 33.3 | 109 | ND | 16.7 | 20.6 | 30.4 | 27.2 |

Results show the detected PFAS out of 18 analytes tested.

Yellow shading shows concentrations above the EPA LHA (Lifetime Health Advisory) (PFOS, PFOA of 70 ppt) and/or Mass ORSG (Office of Research and Standards Guideline) for drinking water (PFOS, PFOA, PFHpA, PFNA, PFHxS of 70 ppt) and/or proposed Mass maximum contaminant level (MCL) for the sum of PFOS, PFOA, PFHpA, PFNA, PFHxS, PFDA of 20 ppt.

ND = non-detect, J = estimated value





Update on Grove Pond Wellfield - Time Critical Removal Action (TCRA)



- Ongoing temporary treatment of Well #8 using granular activated carbon (GAC)
 - ▶ On-line since June 2019; pumping ~ 200 to 300 gpm; >100M gallons treated
 - ▶ Winterized in November 2019
 - ▶ Well #8 raw water was 259 ppt for 5 OSRG PFAS compounds
 - ▶ Treated Well #8 water is non-detect (ND) for PFAS compounds



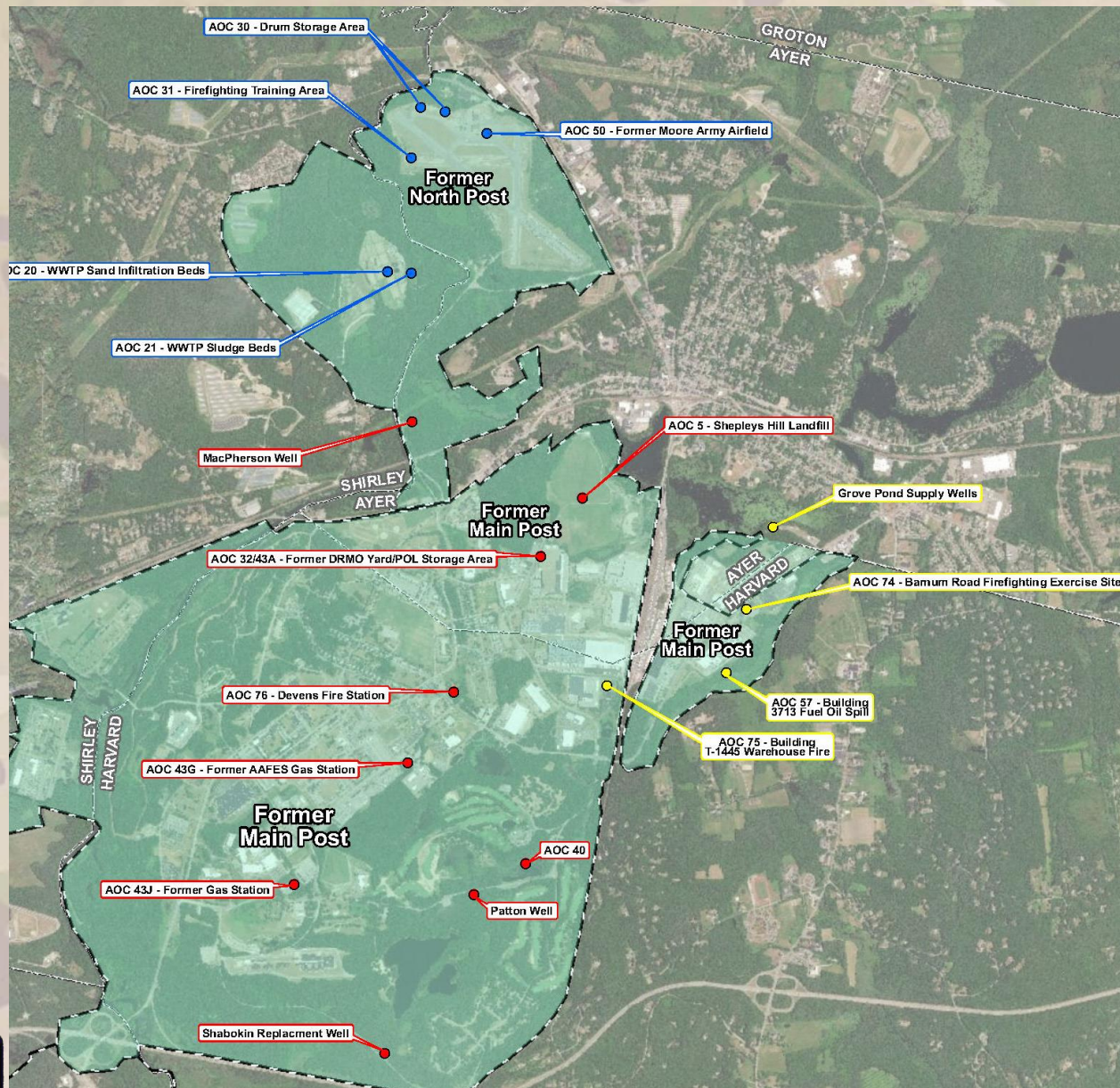


Update on Grove Pond Wellfield - Environmental Services Cooperative Agreement (ESCA)



- Supported by federal ESCA grant ~ \$4.4M signed 5-Sep-2019
- Permanent upgrade to Grove Pond Water Treatment Plant – New Ion Exchange (IX) System
 - ▶ Installation of IX begun: Sept 2019
 - ▶ Anticipated completion: June 2020
 - ▶ Will treat up to 2M gallons per day





RI Areas of Investigation

Area 1 = yellow

Area 2 = red

Area 3 = blue





Drilling and Sampling Activities

- Completed Oct 1 – Dec 31, 2019
 - ▶ 9 Vertical profiles conducted
 - ▶ 6 Monitoring wells and 24 piezometers installed
 - ▶ 56 Soil borings conducted
 - ▶ 31 Monitoring wells sampled
 - ▶ 22 Surface water and sediment samples collected
- Planned in 2020
 - ▶ Vertical profiles
 - ▶ Monitoring well and piezometer installation
 - ▶ Monitoring well sampling
 - ▶ Surface water and sediment sampling
 - ▶ Synoptic water level measurements
 - ▶ Cold Spring Brook investigation





Surface Water and Sediment

- Area 1 – Cold Spring Brook, Grove Pond
- Area 2 – Willow Brook, Plow Shop Pond, Robbins Pond, unnamed tributary, Nonacoicus Brook, Cold Spring Brook Pond, Mirror Lake
- Area 3 – Nashua River, unnamed streams and wetlands
- Proposed background locations – Nashua River, Walker Brook, Mulphus Brook, Bowers Brook, Squannacock River, Balch Pond, Flannagan Pond





SW/Sed Figure Area 1

- (provided as a handout)





SW/Sed Figure Area 2

- (provided as a handout)





SW/Sed Figure Area 3

- (provided as a handout)





Soil Sampling

- Area 1
 - ▶ Area of Contamination (AOC) 57 Areas 2 and 3, AOC 74, AOC 75, Grove Pond Area
- Area 2
 - ▶ AOC 32, AOC 43G, AOC 76, Patton Well Area, AOC 40
- Area 3
 - ▶ AOC 20, AOC 21, AOC 30, AOC 31, AOC 50





SB Figure Area 1

- (provided as a handout)





SB Figure Area 2

- (provided as a handout)





SB Figure Area 3

- (provided as a handout)





Fifth (2020) Devens Five-Year Review (FYR)

- Required by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for sites where hazardous substances, pollutants, or contaminants remain above levels that allow for unlimited use and unrestricted exposure (UU/UE); remedy includes restrictions on land/natural resource use
- Evaluates implementation/performance of selected remedy to determine if remedy is or will be protective of human health and the environment
- Triggered by the signature of the first ROD (with use restriction) (1995 SHL→2000 FYR) and no later than five years following signature date of the previous FYR Report
- If deficiencies are found, FYR Report includes recommendations to address those deficiencies





Five-Year Review Components

- Site inspections
- Community notification/involvement
- Interviews (local officials, community action groups or associations, residents and businesses located near the site, and other pertinent organizations or individuals)
- Data review and analysis
- Document reviews
- Assessment of protectiveness
 - ▶ Are the remedies functioning as intended by the decision document? (i.e., ROD)
 - ▶ Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of remedy selection still valid?
 - ▶ Is there any new information that may call into question the protectiveness of the remedy?





Five-Year Review Locations

- Former Shepley's Hill Landfill (Areas of Contamination [AOCs] 4,5, and 18)
- Devens Consolidation Landfill and Contributor Sites (AOCs 9, 40, and SA 13)
- South Post Impact Area (AOCs 25, 26, 27, and 41)
- Former Barnum Road Vehicle Maintenance Yards (AOCs 44 and 52)
- Former DRMO Yards and Storage Area (AOCs 32 and 43A)
- Former Historic Gas Stations (AOCs 43G and 43J)
- Former Devens Elementary School Fuel Oil Spill (AOC 69W)
- Former Moore Army Airfield (AOC 50)
- Building 3713 Fuel Oil Spill Site (AOC 57)
- Former Devens Main Post Training Areas (former Grant, Oak, and Maple Housing Areas and 37-mm Impact Area)
- Railroad Roundhouse (SA 71)





Five-Year Review Locations





Five-Year Review Schedule

- First Five-Year Review was triggered by signature of the ROD in 1995
- Previous Five-Year Reviews completed in 2000, 2005, 2010, and 2015
- Deadline for 5th Five-Year Review is September 2020
 - ▶ Site Interviews / Site Inspections – Winter/Spring 2020
 - ▶ Draft to Stakeholders – Late Spring 2020
 - ▶ Draft Final – Summer 2020
 - ▶ Final – to be signed in September 2020





Have Questions or Interested in Being Interviewed?

- Contact

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Next Steps

- PFAS RI
 - ▶ Continue sampling efforts in Areas 1, 2, and 3
 - ▶ Compile and present current Area 1 data
- PFAS sampling/treatment
 - ▶ First Quarter 2020 (Feb) sampling of municipal water supply wells
 - ▶ Sampling of private wells north of airfield (Feb./March)
 - ▶ Continued operation of municipal treatment system at Ayer's Grove Pond Well #8
 - ▶ MassDevelopment continuing treatment at MacPherson and Patton water supply wells
- Community Involvement Plan
 - ▶ Receive comments by Feb. 3, then prepare Draft Final CIP
- Five-Year Review
 - ▶ Draft planned for spring 2020





Former Fort Devens Army Installation Project Status Updates

Questions?

