



U.S. ARMY

Former Badger AAP RAB Meeting

January 19, 2023





RAB Agenda

- **Welcome and Opening Remarks**
- **Roll Call**
- **Review of the Minutes**
- **Groundwater Sampling Update**
- **Proposed Monitoring Wells**
- **Project Management Updates**
- **Future Meetings**
- **Questions and Closing Comments**





Welcome/Opening Remarks

Former Badger Army Ammunition Plant Restoration Advisory Board

January 19, 2023





- **Roll Call of Members**
- **Guest Introductions**
- **Review of the Meeting Minutes from October 20, 2022**



Groundwater Sampling Update





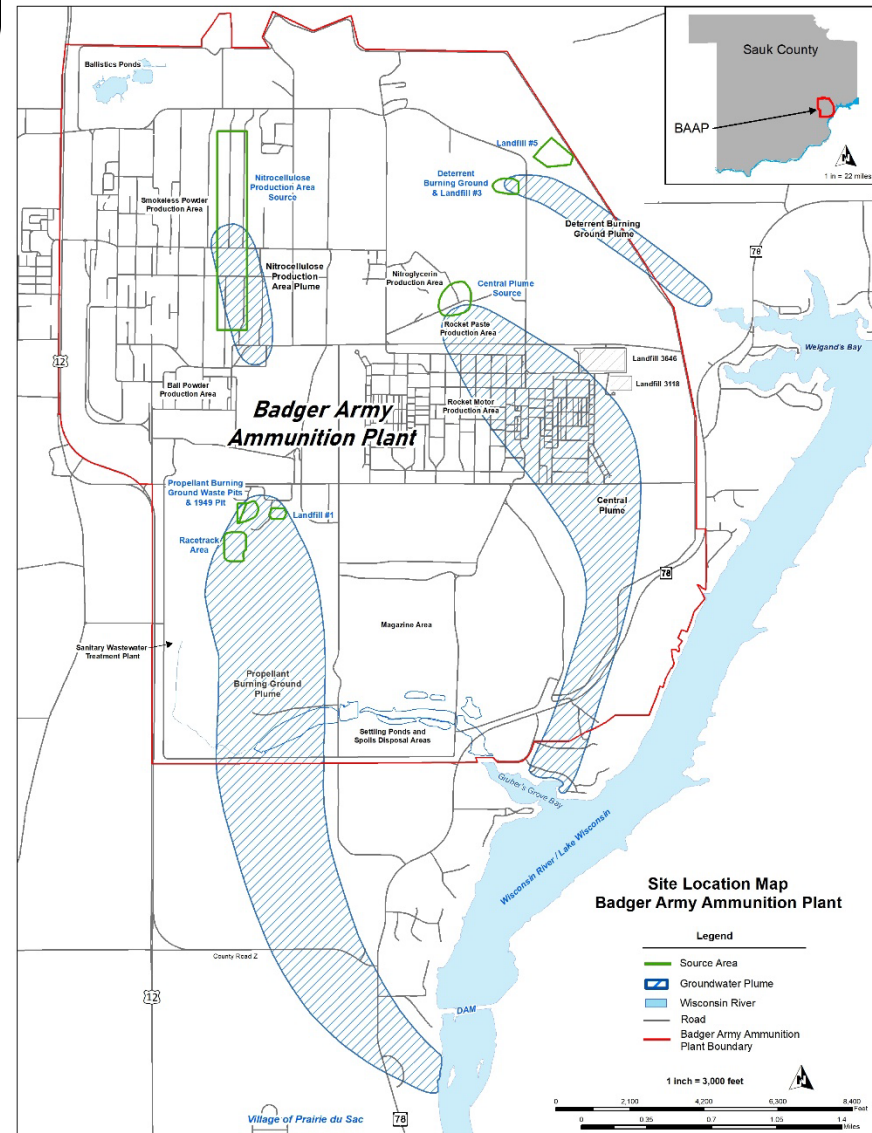
Groundwater Sampling Update

2022 Groundwater Sampling Events

- **September 2022** - 128 monitoring wells sampled - *DBG (46), NC (7) & PBG (75)*
- **November 2022** - 16 monitoring wells and 2 residential wells sampled - *Central (10) & DBG (8)*

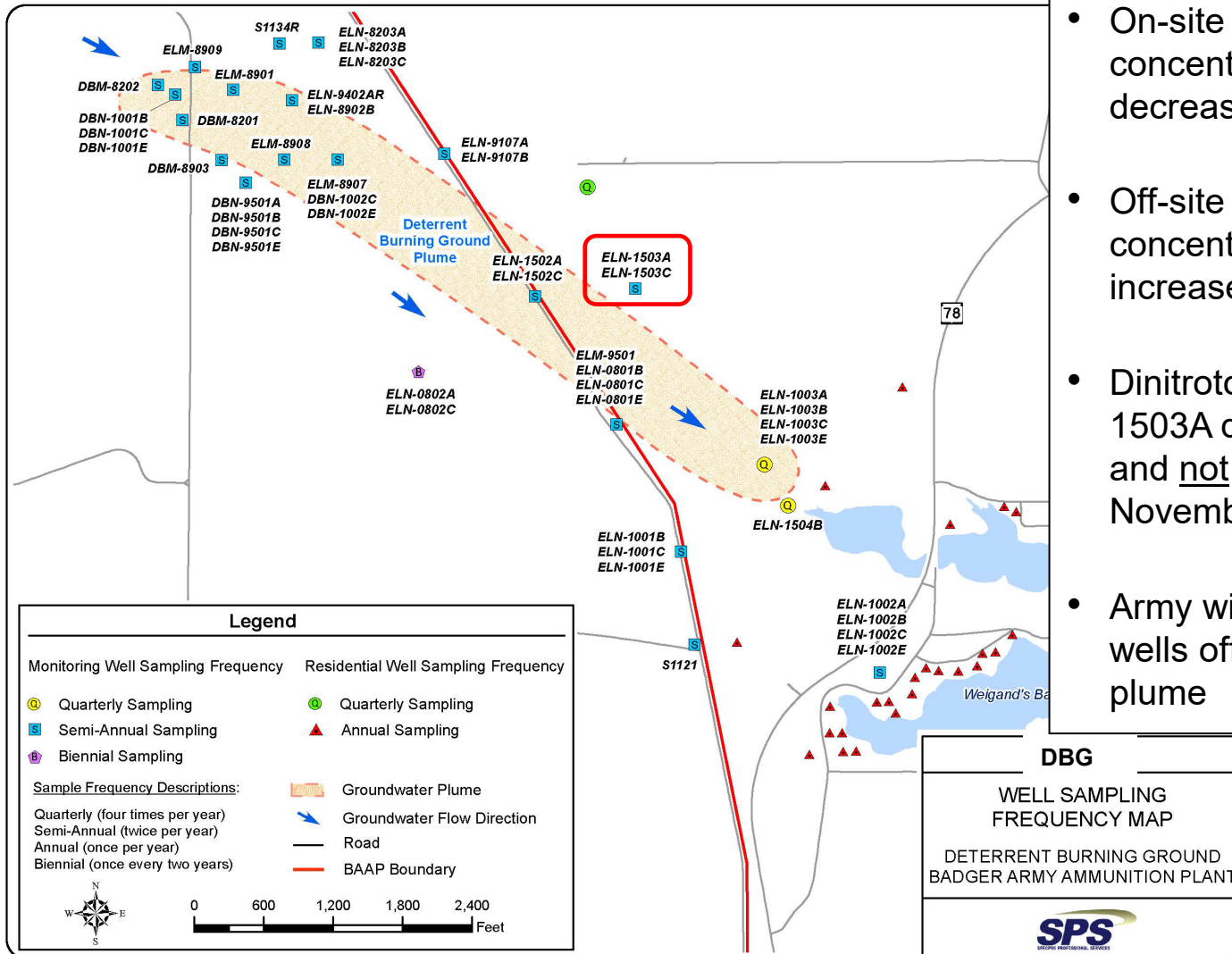
2023 Groundwater Sampling Events

- **April 2023** - 116 monitoring wells and 2 residential wells - *Central (1), DBG (46), NC (4) & PBG (67)*
- **June 2023** - 47 monitoring wells and 2 residential wells - *Central (41) & DBG (8)*
- **August 2023** - 58 residential wells
- **Central Plume** - DNT concentrations stable
- **NC Area Plume** - DNT concentrations stable





Groundwater Sampling Update



- On-site Dinitrotoluene concentrations have decreased past 5 years
- Off-site Dinitrotoluene concentrations have increased past 5 years
- Dinitrotoluene in ELN-1503A decreased in 2022 and not detected in November 2022
- Army will install additional wells off-site to define plume

Deterrent Burning Ground





Project Management Updates

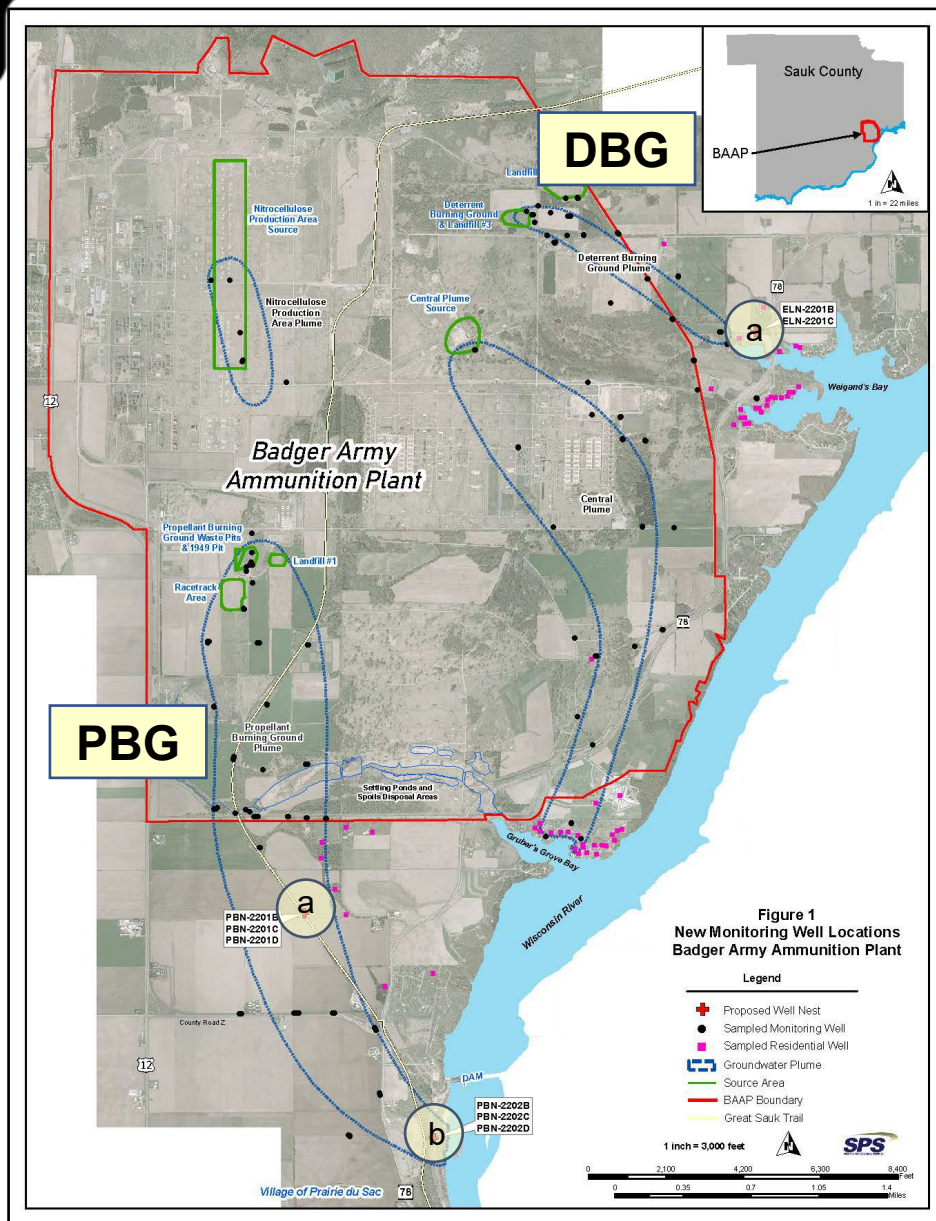
Groundwater Monitoring Network Optimization

- **USGS Trends Analysis Report**
 - Army proposes monitoring wells to be installed to monitor the Deterrent Burning Ground and Propellant Burning Ground Plumes
 - Army proposes 8 monitoring wells
- **Monitoring Network Optimization Plan**
 - Draft Final Plan submitted to WDNR for review September 29, 2022
 - WDNR approved plan on October 27, 2022
 - WDNR suggested implementation of additional wells to further define downgradient extent and Northwest extent of Central Plume
- **Real Estate Access Options**
 - USAEC collaborating with the USACE-Omaha District and property owners





Proposed Monitoring Wells



- **Deterrent Burning Ground Plume (DBG)** : 1 location; 2 wells
 - a) Estimated Depths
 - i. 93 ft
 - ii. 158 ft
- **Propellant Burning Ground Plume (PBG)** : 2 locations; 6 wells
 - a) Estimated Depths
 - i. 119 ft
 - ii. 165 ft
 - iii. 213 ft
 - b) Estimated Depths
 - i. 51 ft
 - ii. 98 ft
 - iii. 147 ft
- Anticipated well installation in 2023
- Currently obtaining permission from property owners
- Additional wells to provide off-site delineation of the plumes
- Wells to be installed as nests, providing a vertical profile of the plume

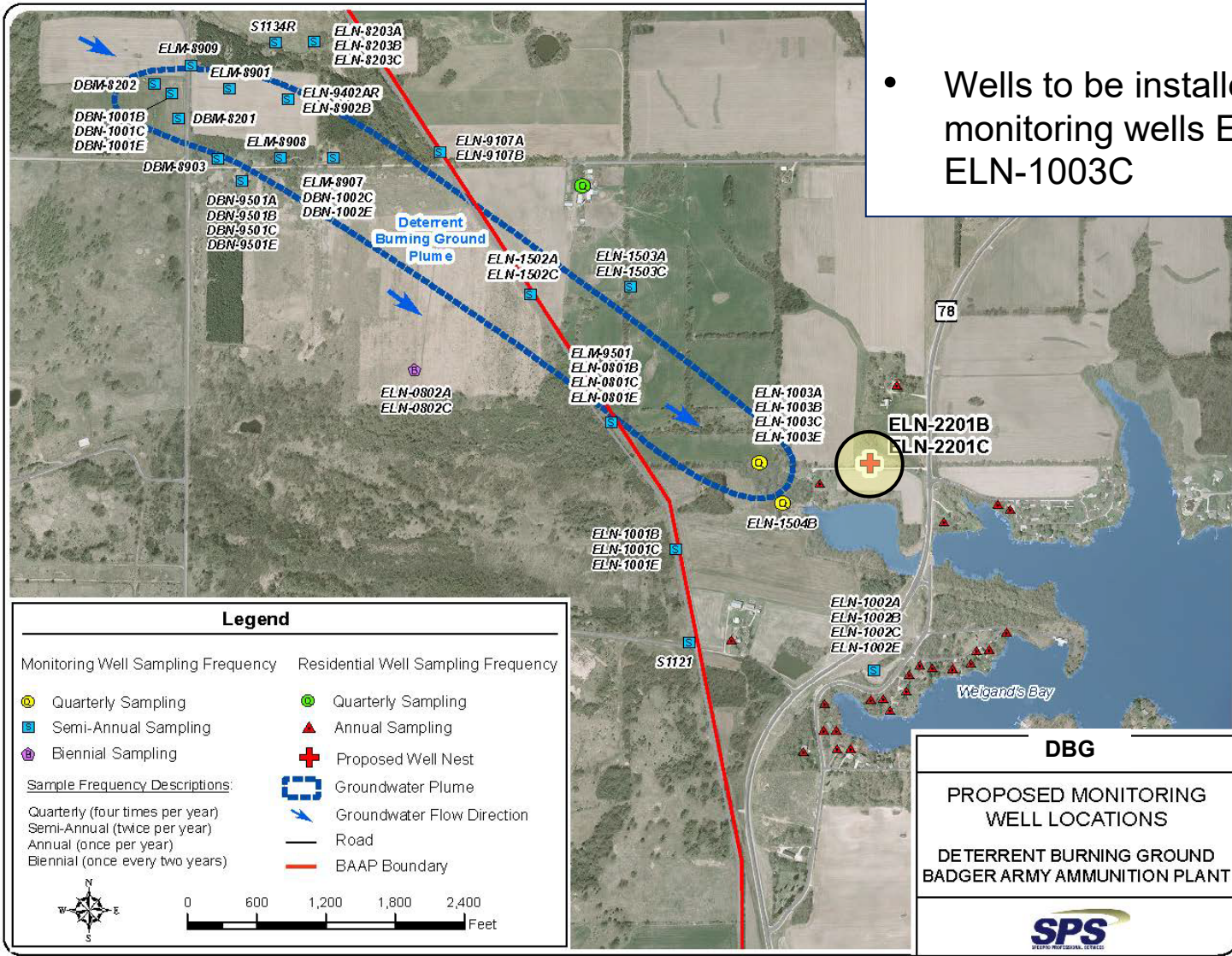




Proposed Monitoring Wells

Deterrent Burning Ground

- Wells to be installed similar to monitoring wells ELN-1003B and ELN-1003C



DBG

PROPOSED MONITORING WELL LOCATIONS

DETERRENT BURNING GROUND BADGER ARMY AMMUNITION PLANT

Legend

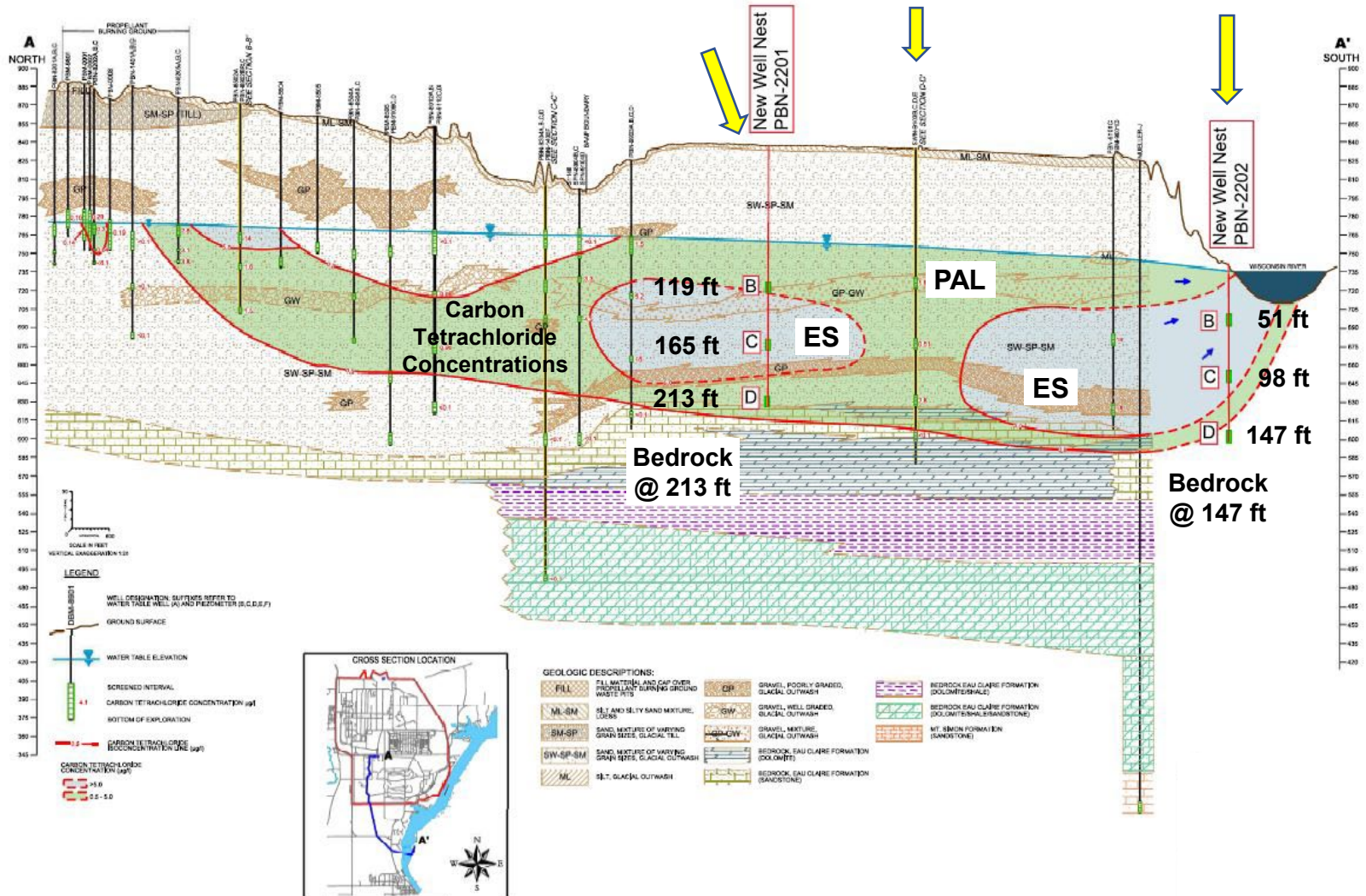
Monitoring Well Sampling Frequency	Residential Well Sampling Frequency
<ul style="list-style-type: none"> ● Quarterly Sampling ■ Semi-Annual Sampling ■ Biennial Sampling 	<ul style="list-style-type: none"> ● Quarterly Sampling ▲ Annual Sampling + Proposed Well Nest
<p>Sample Frequency Descriptions:</p> <ul style="list-style-type: none"> Quarterly (four times per year) Semi-Annual (twice per year) Annual (once per year) Biennial (once every two years) 	<ul style="list-style-type: none"> - - - Groundwater Plume → Groundwater Flow Direction — Road — BAAP Boundary

0 600 1,200 1,800 2,400 Feet





Proposed Monitoring Wells

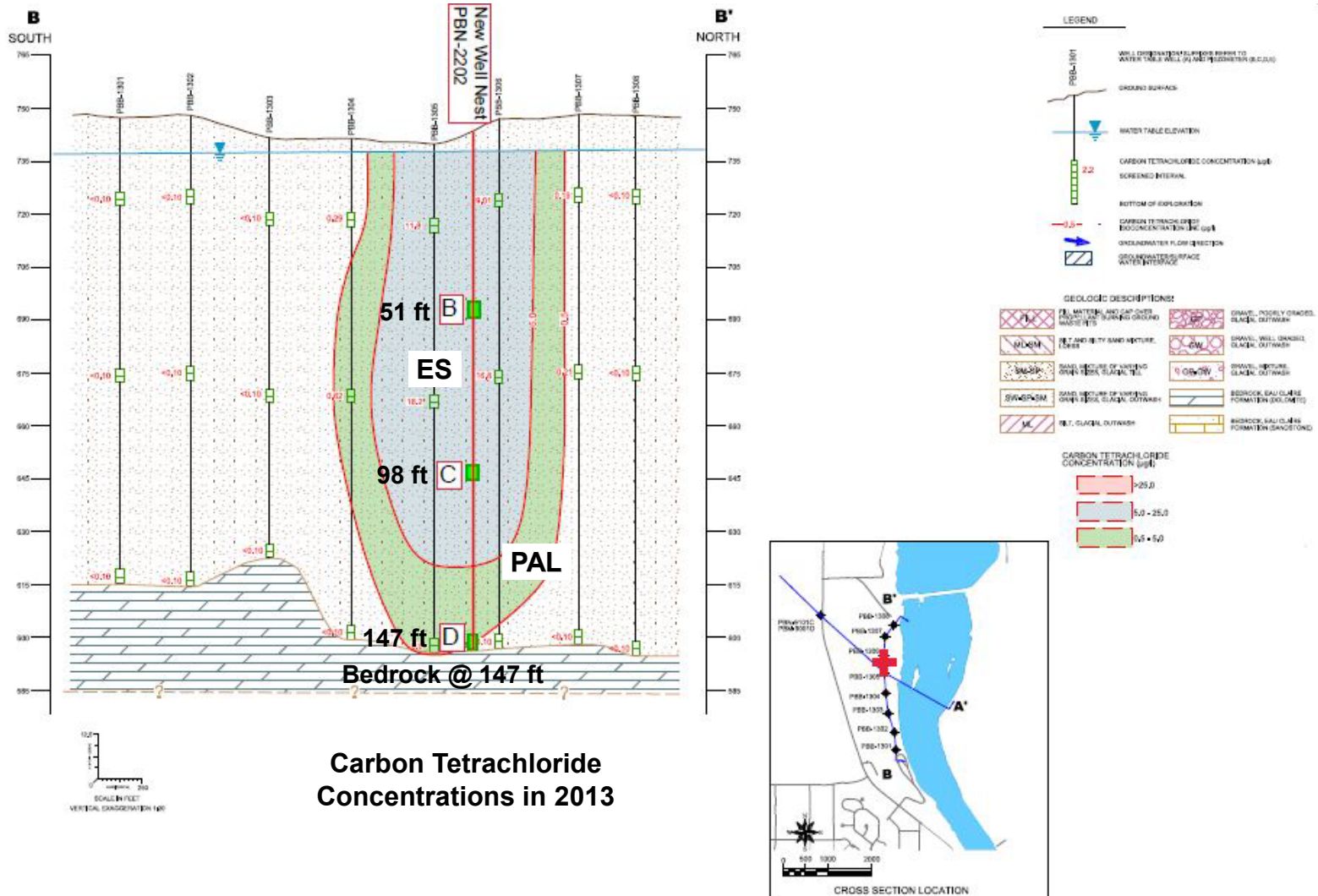


Propellant Burning Ground Cross-Section A – A'





Proposed Monitoring Wells



Propellant Burning Ground Cross-Section B – B'





Project Management Updates

Gruber's Grove Bay Remedial Action Alternatives Evaluation

- **Contract awarded September 2022 to AECOM**
 - Ongoing high level of effort for evaluation of BAAP historical information; completion date of Draft Desktop Supplemental Remedial Investigation is revised
 - The Army team met with the WDNR and on December 19, 2022 to discuss project objectives and seek WDNR input
- **Key near-term objectives:**
 - Characterize the site to the extent necessary to support subsequent decisions
 - Define the risk to human health and the environment posed by the site
 - Refine and identify viable remedial action alternatives
 - Identify applicable or relevant and appropriate requirements (ARARs)
 - Evaluate the need for a Data Gap Investigation or treatability studies





Project Management Updates

USGS Support FY23/24

- **Continue Groundwater Modeling**
 - Great progress with modeling work as of December 2022.
 - Will continue to focus on simulating contaminant transport at the Propellant Burning Ground Plume, Deterrent Burning Ground Plume, and Central Plume.
 - Plan to complete a base contaminant transport model in 2023
 - Base contaminant transport model will be used to run model scenarios for the site under monitored natural attenuation and the additional remedial action(s) outlined in the Proposed Plan for Site-Wide Groundwater.
 - Groundwater flow model report is anticipated to be presented in the April 2023 RAB.
 - Transport model report presentation planned for the July 2023 RAB.
 - Initiate pilot study for groundwater treatment to inform remedial design for selected remedial action.





Project Management Updates

Proposed Plan (PP) for the Site-Wide Groundwater

- **PP is to execute an Anaerobic Bioremediation Strategy**
 - Strategy is expected to reduce the groundwater concentrations of both volatile organic compounds (VOCs) and DNT
 - Injection well locations will be strategically placed both on-site BAAP and off-site (beyond BAAP property)
- **Draft PP reviewed by the Army legal on November 29, 2022**
- **Next Steps**
 - Army preparing draft final PP for submission to WDNR
 - WDNR will review and comment on PP
 - Army will hold a public meeting strictly to discuss the Site-Wide Groundwater PP
 - 30-day Public Comment Period will solicit written comments/feedback
 - A Record of Decision (ROD) anticipated before end of FY25





Project Management Updates

2nd Five-Year Review (FYR)

- Kickoff held for 2nd Five-Year Review on October 17, 2022
- Review is to be completed by July 2, 2023
- Public Notice of FYR will be advertised

Community Involvement Plan (CIP)

- Army in process of updating the CIP in 2023
- Army is currently seeking community inputs in development of CIP





Project Management Updates

Key FY23 Contracting Actions

- **Settling Pond Expanded Site Inspection**
 - Includes Final Creek, Settling Ponds 1 & 3, and Spoils Disposal Areas I, II, III, IV, & V
 - Army completed Independent Government Cost Estimates December 2022
 - Acquisition process underway (solicitation, proposal review, negotiations, etc)
 - Project anticipated to be awarded in Spring 2023
- **Site-Wide Groundwater Monitoring Plan**
- **PFAS Remedial Investigation for Propellant Burning Ground**
 - Scoping and cost estimating underway
- **Landfill #5 - Repair of Settled Areas**
 - Contract modification expected in FY23





Future meetings

- **Future Meetings**

- Agenda Items

- Dates

- April 20, 2023

- July 20, 2023

- October 19, 2023

- January 18, 2024





Questions??

Public Comments

Closing Remarks

