



Status of Cleanup at Twin Cities Army Ammunition Plant (TCAAP)

15 March 2022

US Army Environmental
Command (USAEC)



AGENDA – March 15, 2022 at 7 p.m.

- Review/Approve minutes of last meeting
- Old Business
- Cleanup Status Update
- New Business
- USGS GW Modeling Presentation
- Next Meeting Agenda
- Public Comments





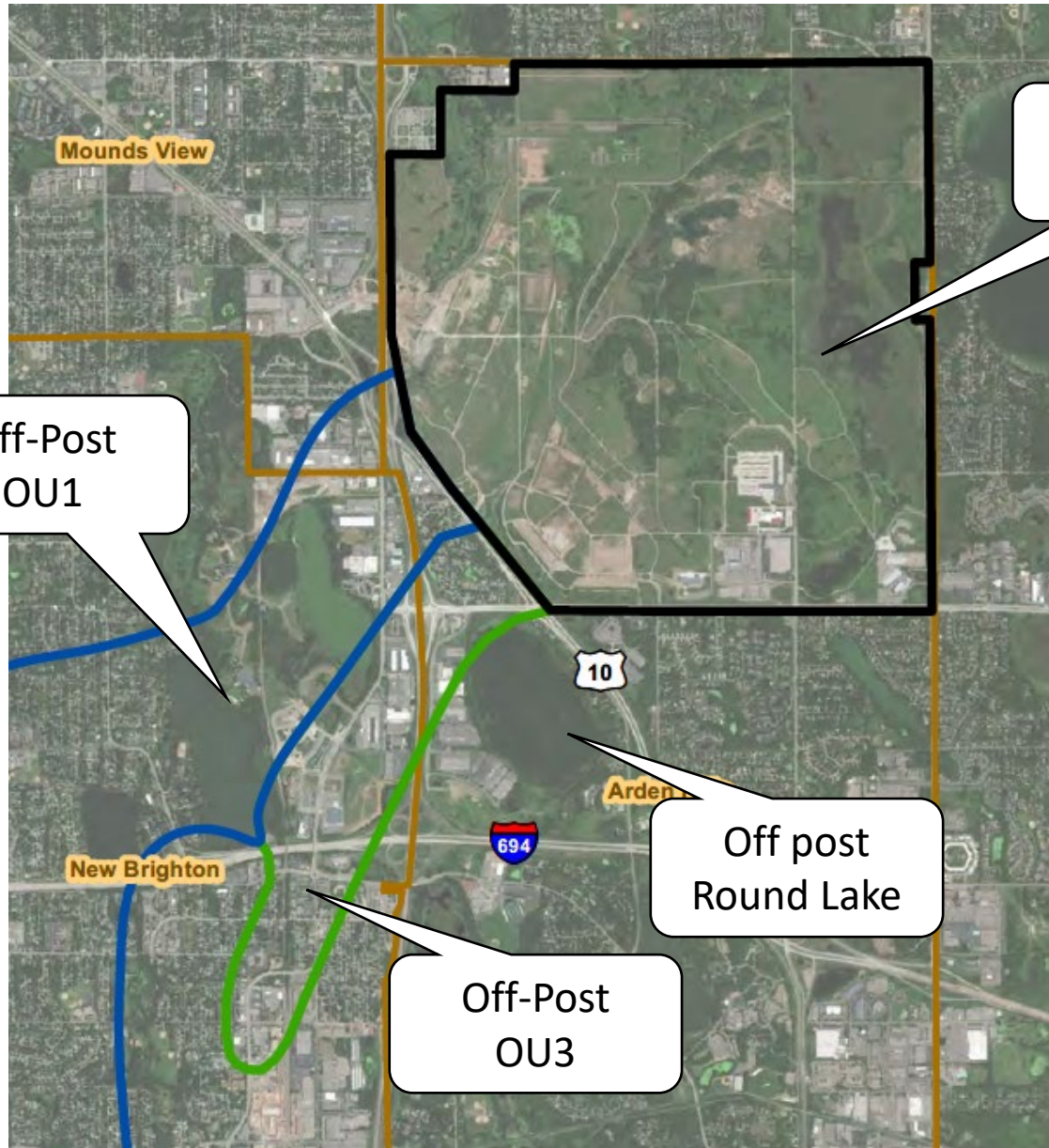
Old Business

- Vote to accept the minutes from previous meeting
- Army is coordinating with well owners and establishing contract mechanism to connect three well owners to municipal water supply
- Next annual groundwater sampling scheduled for June/July 2022





TCAAP Cleanup Status Update







On-Post
OU2

Off-Post
OU1

Off post
Round Lake

Off-Post
OU3

LEGEND:

-  Operable Unit 1 (North Plume)
-  Operable Unit 2 of the New Brighton/ Arden Hills Superfund Site (the same area occupied by the Twin Cities Army Ammunition Plant in 1983, when the Site was placed on the NPL.)
-  Operable Unit 3 (South Plume)
-  Municipal Boundaries





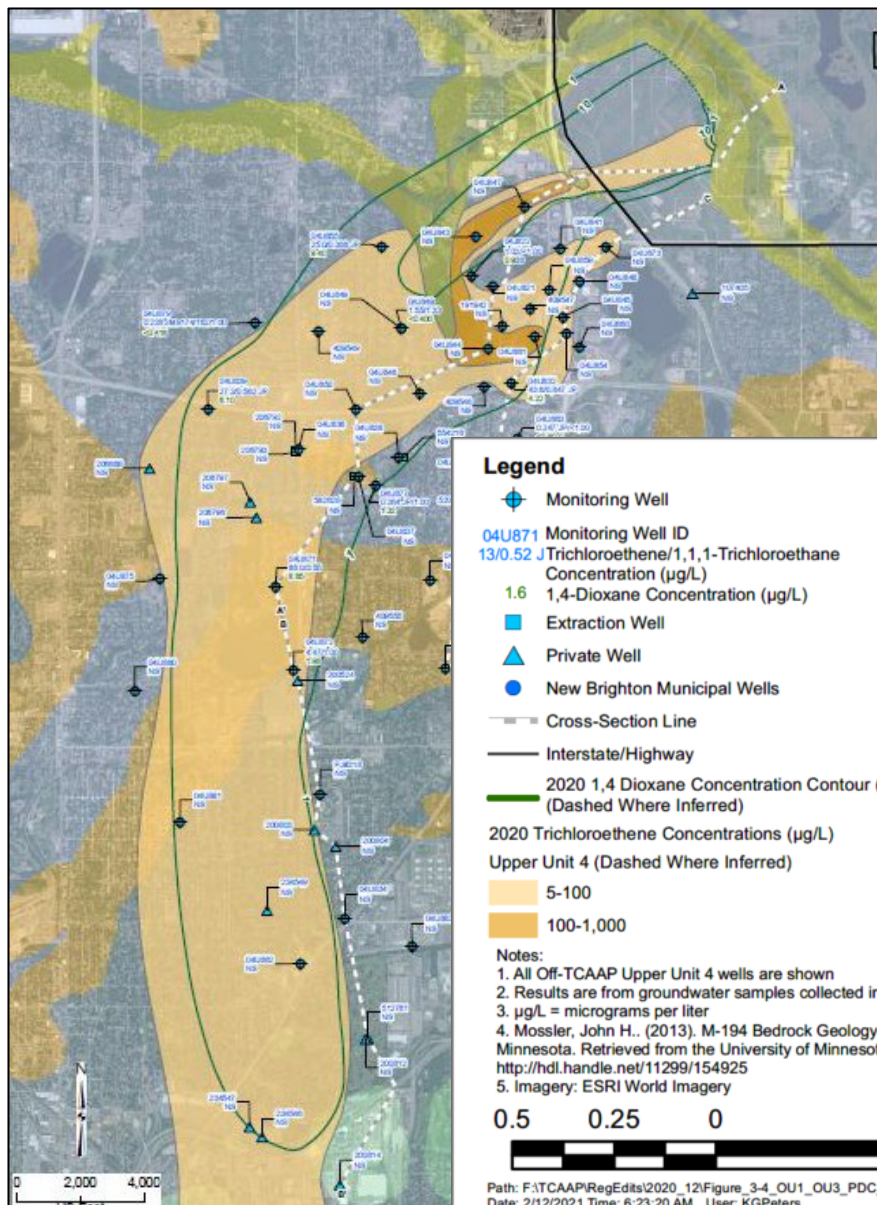
What has the Army done since December 2021?

- Submitted 2021 Annual Performance Report to regulators in February 2022
- Submitted Round Lake Record of Decision to regulators in February 2022.
- Met about Round Lake ARARs on 9 December 2021.
- Met with Groundwater Stakeholders on 15 December 2021. Will meet again on 15 June 2022.
- Updated plume maps from FY2021 APR follow.





FY2021 – Prairie du Chien Plume Map

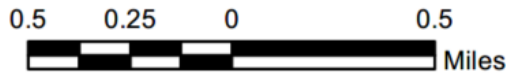


Legend

- Monitoring Well
 - Operable Unit 2
 - 04U871** Monitoring Well ID
 - 13/0.52** Trichloroethene/1,1,1-Trichloroethane Concentration ($\mu\text{g/L}$)
 - 1.6** 1,4-Dioxane Concentration ($\mu\text{g/L}$)
 - Extraction Well
 - Private Well
 - New Brighton Municipal Wells
 - Cross-Section Line
 - Interstate/Highway
 - 2020 1,4 Dioxane Concentration Contour ($\mu\text{g/L}$) (Dashed Where Inferred)
 - 2020 Trichloroethene Concentrations ($\mu\text{g/L}$) Upper Unit 4 (Dashed Where Inferred)
 - 5-100
 - 100-1,000
- Bedrock Geology**
- Decorah Shale, Galena Group
 - Platteville and Glenwood Fms
 - St. Peter Sandstone
 - Prairie du Chien Group
 - Jordan Sandstone
 - St. Lawrence Formation
 - Tunnel City Group

Notes:

1. All Off-TCAAP Upper Unit 4 wells are shown
2. Results are from groundwater samples collected in June 2020.
3. $\mu\text{g/L}$ = micrograms per liter
4. Mossler, John H., (2013). M-194 Bedrock Geology of the Twin Cities Ten-County Metropolitan Area, Minnesota. Retrieved from the University of Minnesota Digital Conservancy, <http://hdl.handle.net/11299/154925>
5. Imagery: ESRI World Imagery

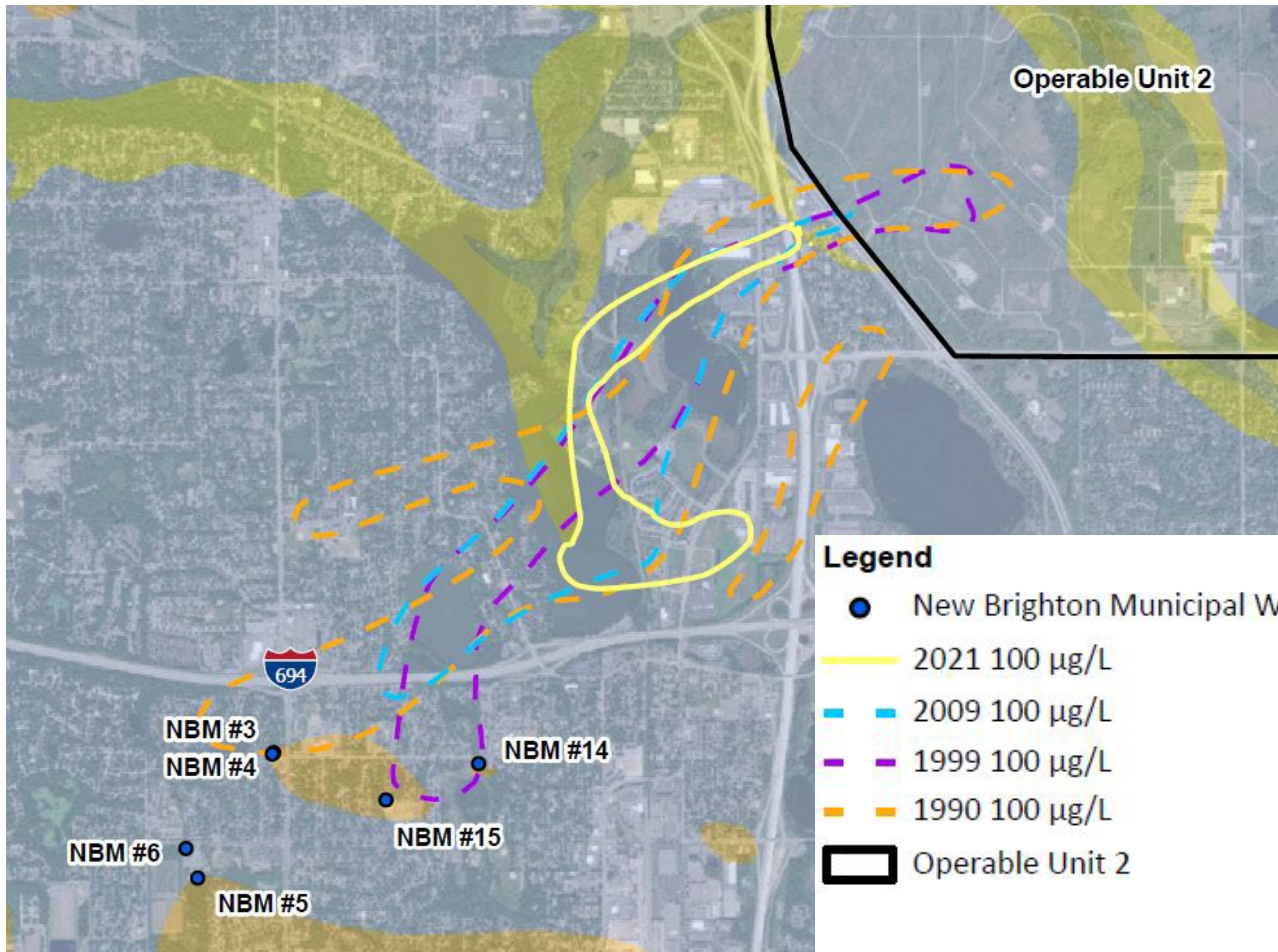


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FY2021 – Prairie du Chien Plume Map Over Time



Legend

- New Brighton Municipal Wells
- 2021 100 µg/L
- 2009 100 µg/L
- 1999 100 µg/L
- 1990 100 µg/L
- ▭ Operable Unit 2

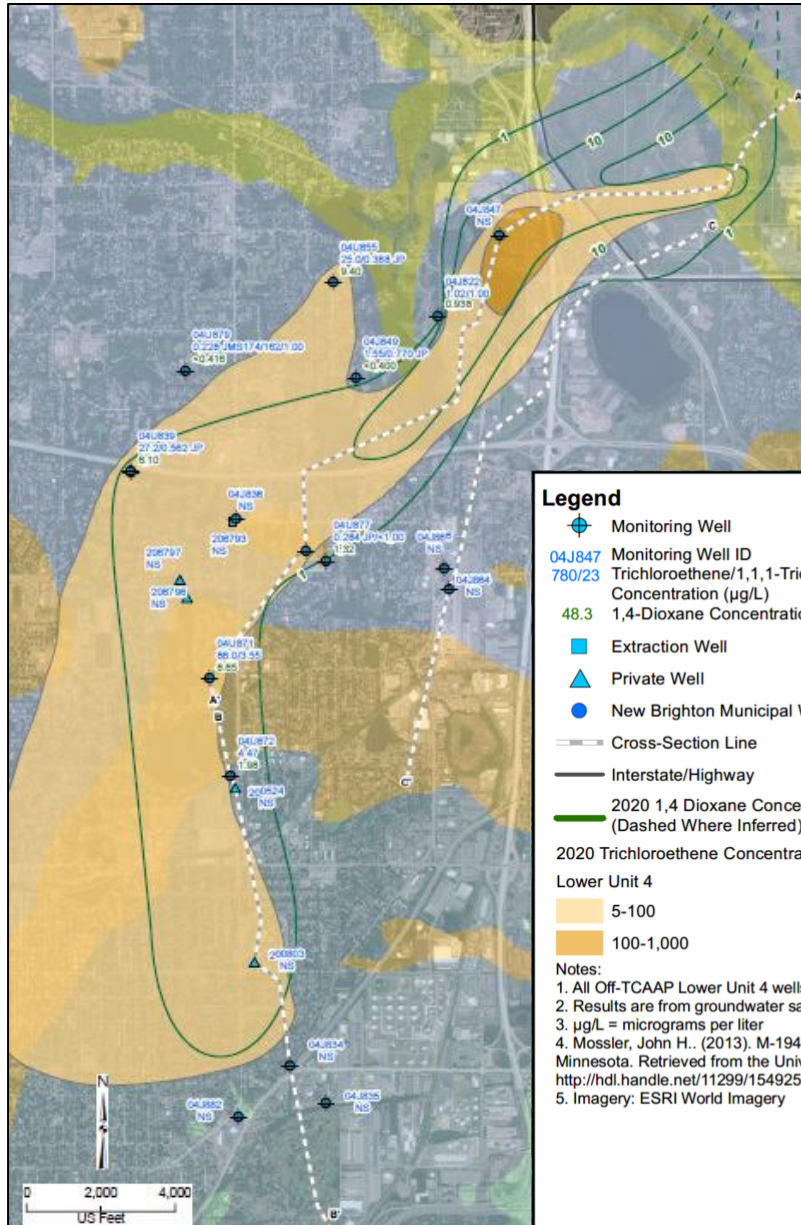
Bedrock Geology

- Decorah Shale, Galena Group
- Platteville and Glenwood Fms
- St. Peter Sandstone
- Prairie du Chien Group
- Jordan Sandstone
- St. Lawrence Formation
- Tunnel City Group





FY2021 – Jordan Plume Map

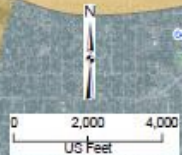


Legend

- Monitoring Well
- 04J847** Monitoring Well ID
- 780/23** Trichloroethene/1,1,1-Trichloroethane Concentration (µg/L)
- 48.3** 1,4-Dioxane Concentration (µg/L)
- Extraction Well
- Private Well
- New Brighton Municipal Wells
- Cross-Section Line
- Interstate/Highway
- 2020 1,4 Dioxane Concentration Contour (µg/L)
(Dashed Where Inferred)
- 2020 Trichloroethene Concentrations (µg/L)
- Lower Unit 4
 - 5-100
 - 100-1,000
- Operable Unit 2
- Bedrock Geology
 - Decorah Shale, Galena Group
 - Platteville and Glenwood Fms
 - St. Peter Sandstone
 - Prairie du Chien Group
 - Jordan Sandstone
 - St. Lawrence Formation
 - Tunnel City Group

Notes:

1. All Off-TCAAP Lower Unit 4 wells are shown
2. Results are from groundwater samples collected in June 2020.
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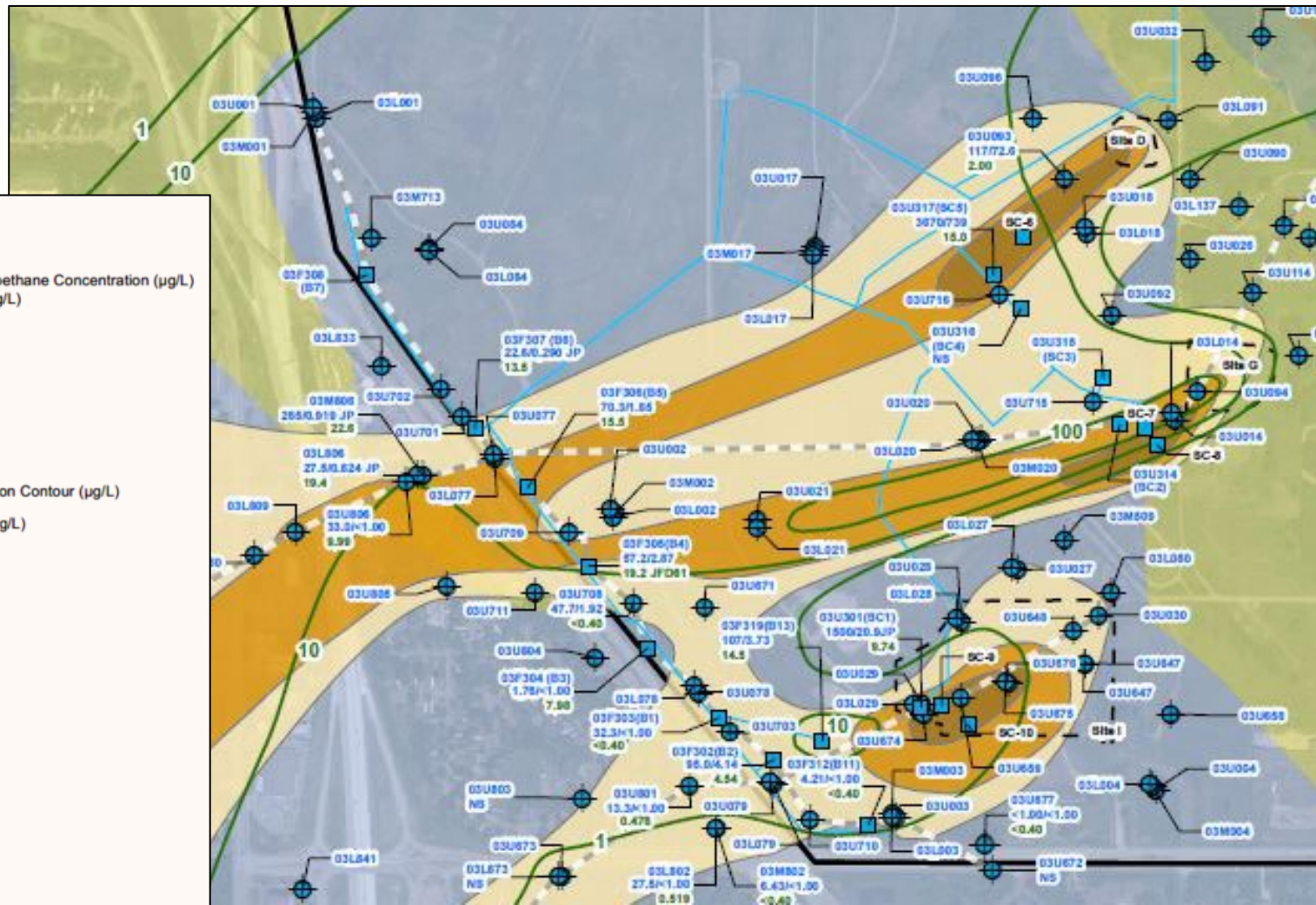




FY2021 – OU2 Unconsolidated Sediments Plume Map

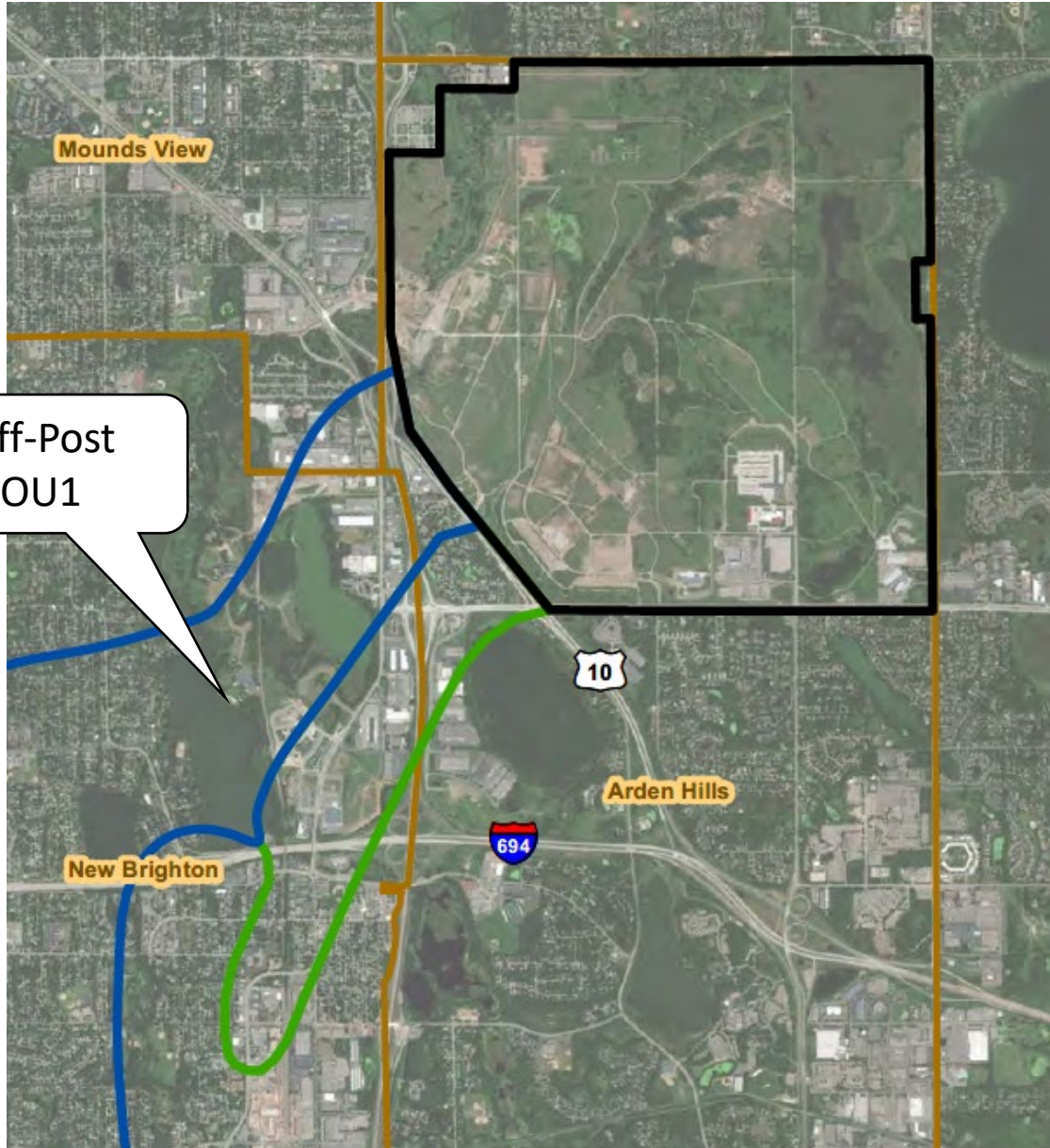
Legend

- 03U093 Monitoring Well ID
- 130/55 Trichloroethene/1,1,1-Trichloroethane Concentration (µg/L)
- 1.6 1,4-Dioxane Concentration (µg/L)
- Extraction Well
- ▲ Private Well
- - - Cross-Section Line
- Site Boundary
- Extraction Well Piping
- 2020 1,4 Dioxane Concentration Contour (µg/L)
- 2020 Trichloroethene Concentrations (µg/L)
- Upper and Lower Unit 3
- 5-100
- 100-1000
- 1000+
- Operable Unit 2
- Bedrock Geology
- St. Peter Sandstone
- Prairie du Chien Group
- Jordan Sandstone
- St. Lawrence Formation
- Tunnel City Group









Twin Cities Army Ammunition Plant Cleanup



Off-Post
OU1

LEGEND:

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-  Municipal Boundaries





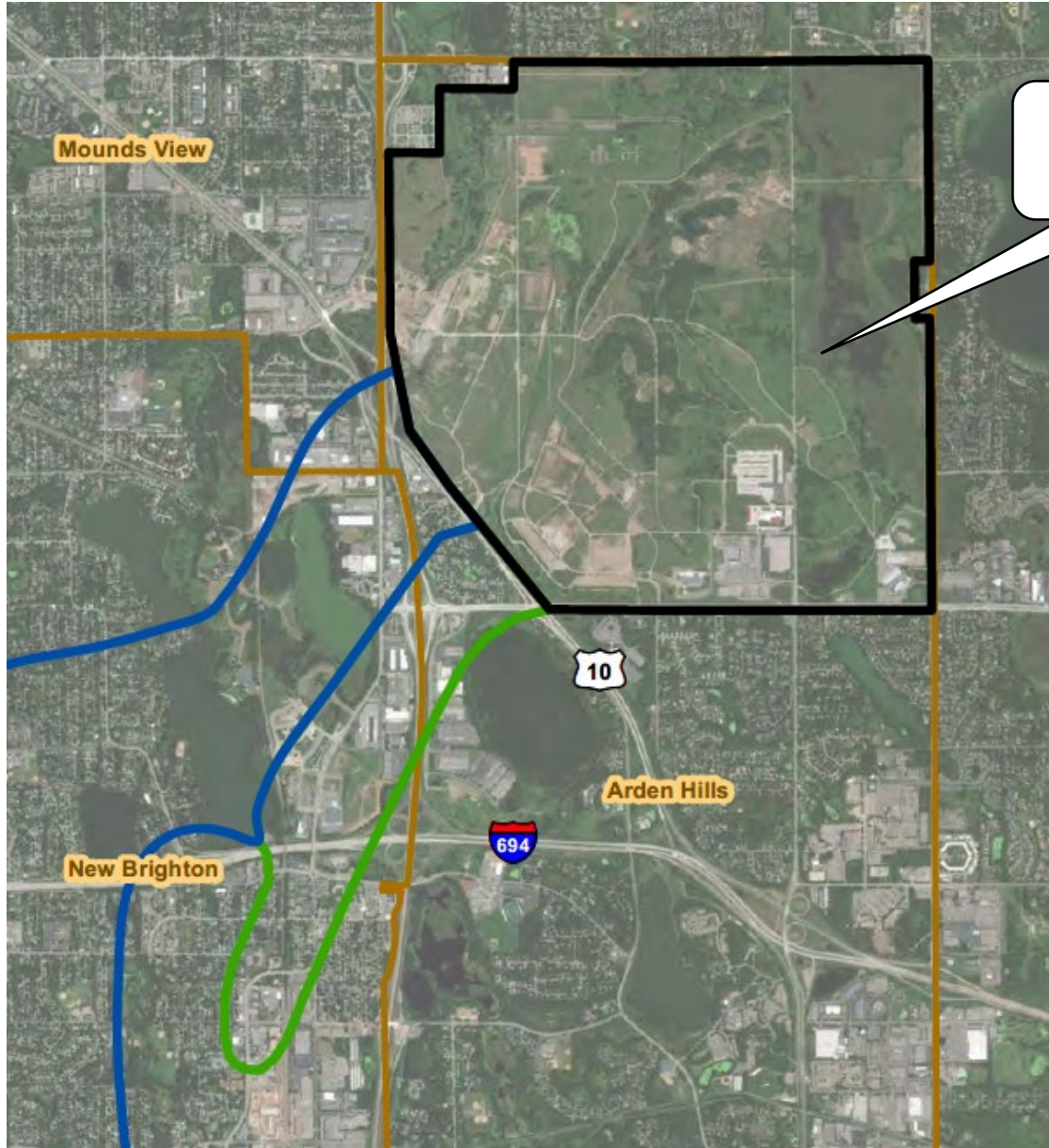
OU1 Optimization

- Goal: increase amount of contaminant removed by relocating well more central to plume.
- Army will fund and New Brighton will install new drinking water supply well in 2022.
- Army will continue to work with New Brighton to ensure drinking water treatment operations are not affected.









Twin Cities Army Ammunition Plant Cleanup



On-Post
OU2

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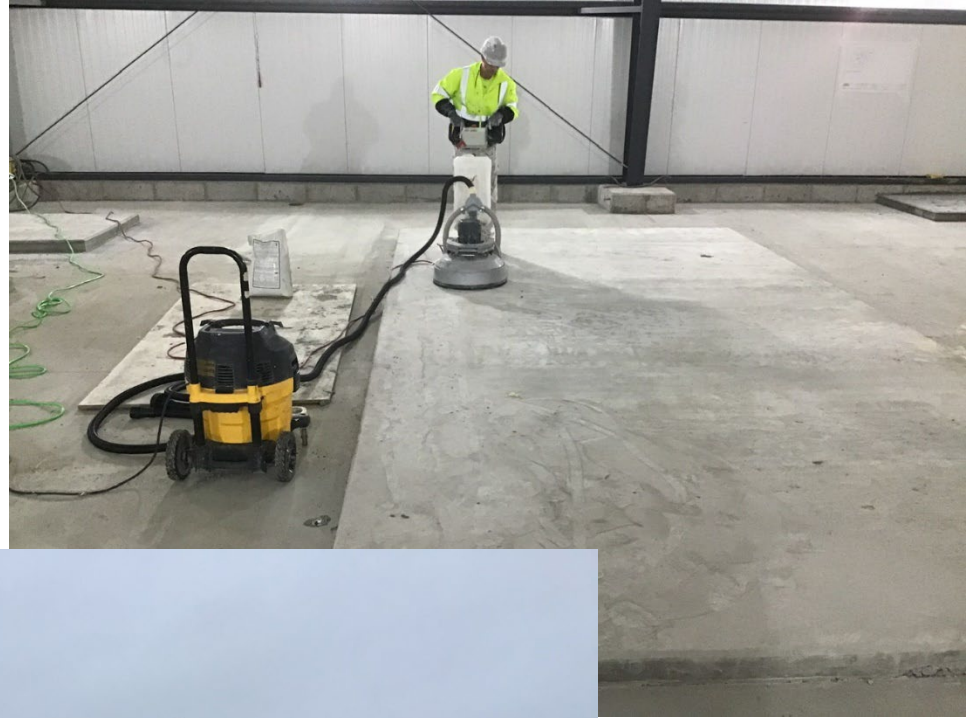
OU2 Optimization

- Construction on SGRS building continues. Expected completion in May 2022.
- Water line installation completed.
- Building interior preparations ongoing – floor, equipment pads, and equipment ramp poured.
- AOR/air stripper delivered and scheduled for installation in March 2022.



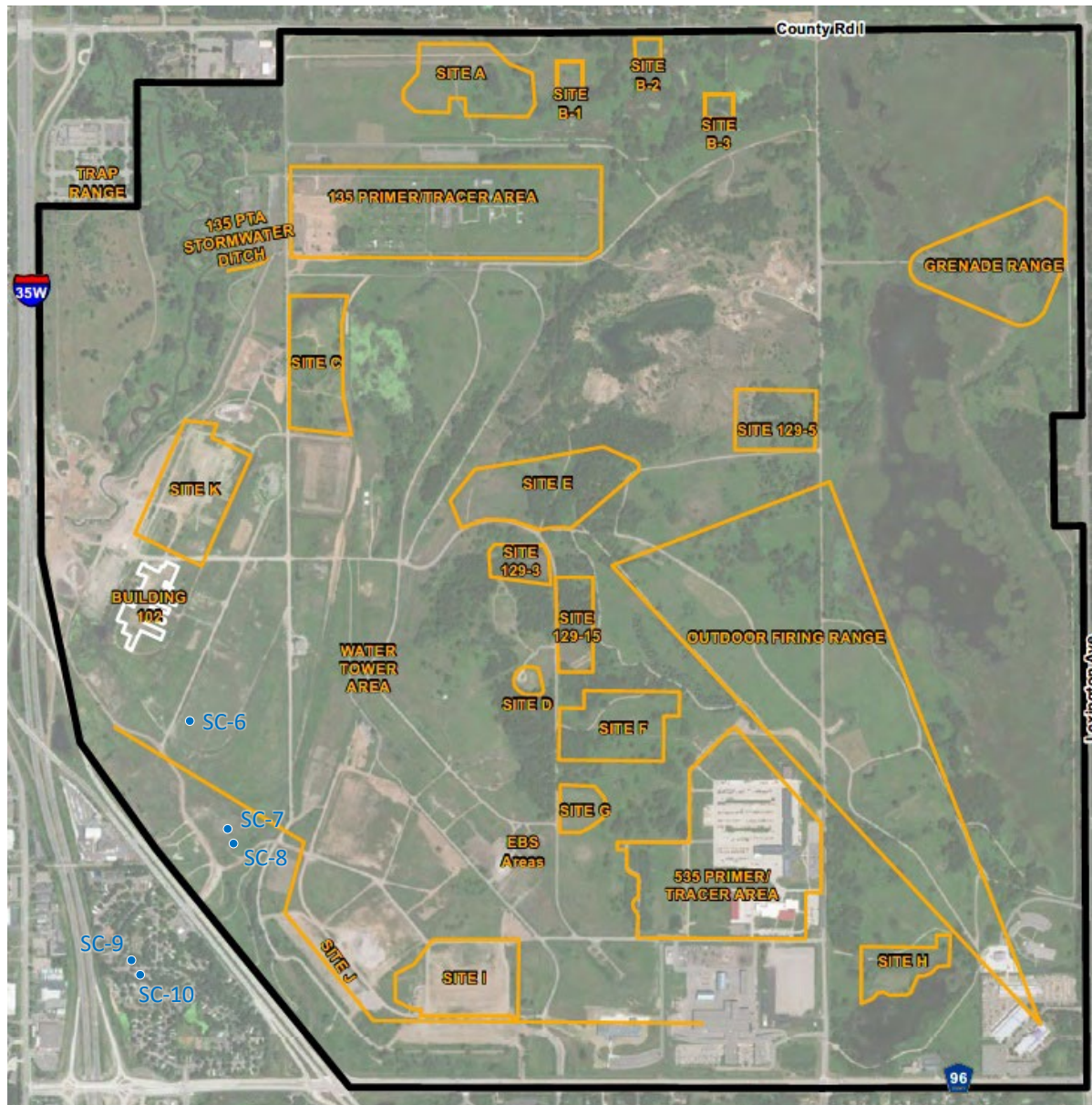


OU2 Optimization





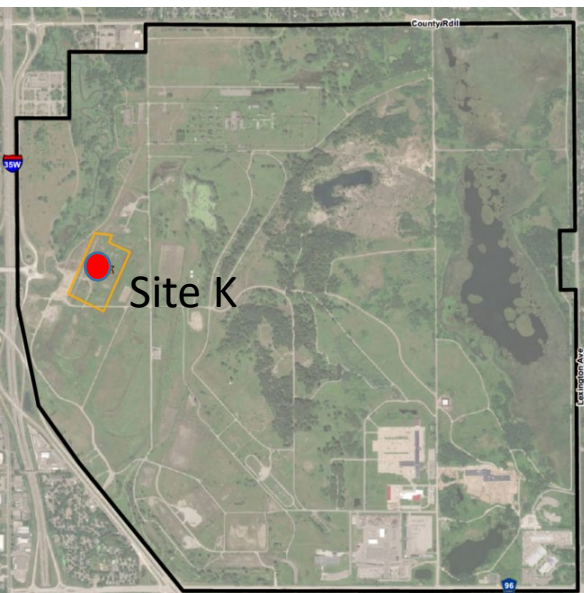
OU2





OU2 – Site K USGS Treatability Study

- Purpose: to improve shallow groundwater remediation of TCE.
- Both quarterly and performance monitoring ongoing.
- No change since December 2021 RAB presentation.









Twin Cities Army Ammunition Plant Cleanup



LEGEND:

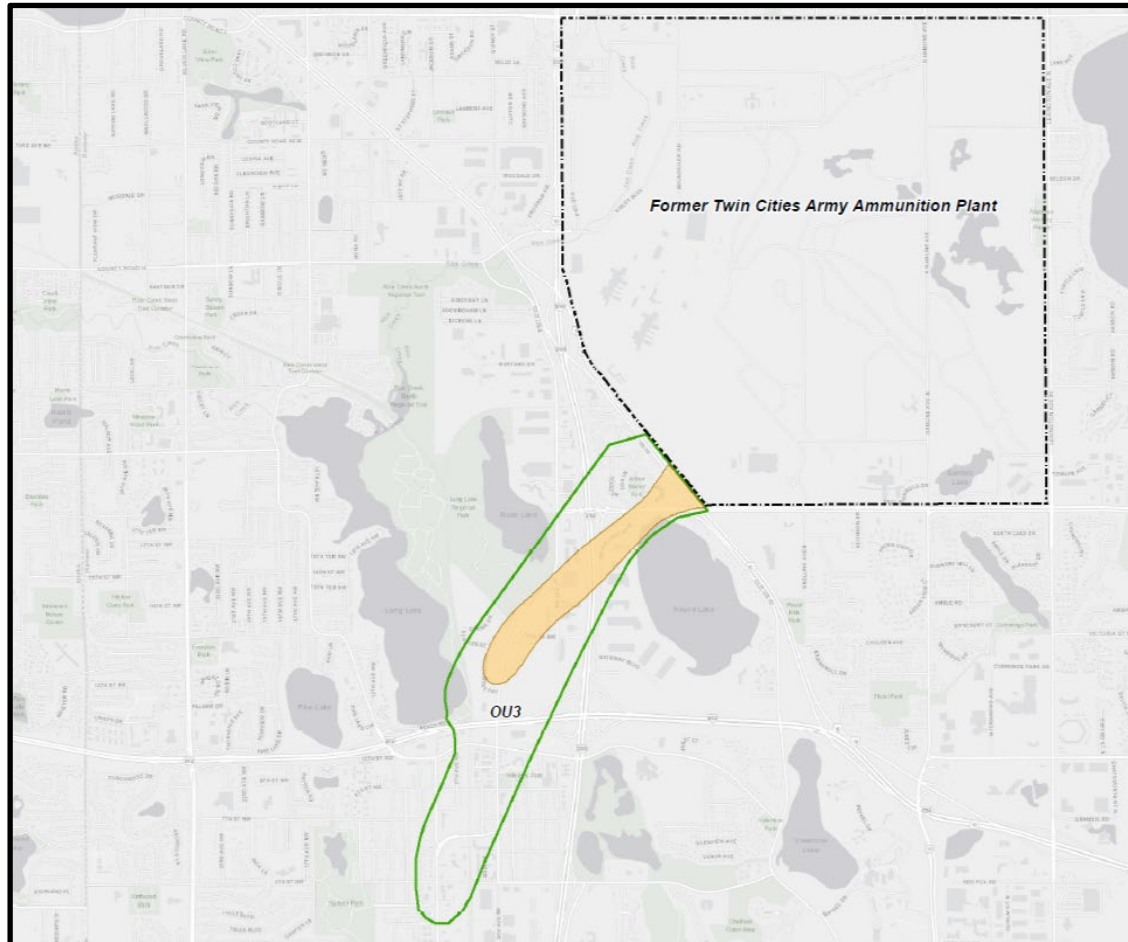
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Off-Post
OU3

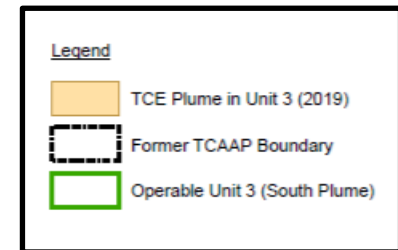




OU3 Plume



- Continued monitored natural attenuation
- Annual groundwater sampling expected in June/July 2022
- Updated maps are available in the FY2021 Annual Performance Report









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Off post
Round Lake





Round Lake – Next Steps

- Record of Decision (ROD) – Army submitted to regulators in February 2022 and will release to the public once accepted by EPA and MPCA.
- Responsiveness summary is included with the ROD.
- Next Round Lake Technical Working Group Meeting expected 30 days after ROD acceptance.





What's Next

- OU1
 - Army will fund and New Brighton will install new drinking water supply well.
- OU2
 - Complete abandonment of 40 monitoring wells.
 - Complete installation of 3 monitoring wells including optimization of the monitoring well network.
 - Conduct Risk Assessment for unrestricted land use.
 - Conduct Engineering Evaluation/Cost Analysis for the 135 Primer Tracer Area.
- OU3
 - Continue groundwater monitoring.
- Round Lake
 - Publish Record of Decision





New Business

- Proposed SGRS tour in June 2022. Need level of interest.
- Topics for future RAB meetings?
- Additional administrative requirements for RAB?
- Suggestions for improvement of RAB?





USGS Presentation

- Megan Haserodt
- Senior Hydrologist
- USGS Upper Midwest Groundwater Modeling Team





Next Meeting Agenda

- Review/Approve minutes of last meeting
- Old Business
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Public Comments

- Does anyone have any comments, concerns or suggestions





Questions

You can ask questions now or at anytime using the email listed on the website.

