

ROCKY MOUNTAIN ARSENAL 2019 UPDATE



Prepared for:
Commerce City Council
August 19, 2019

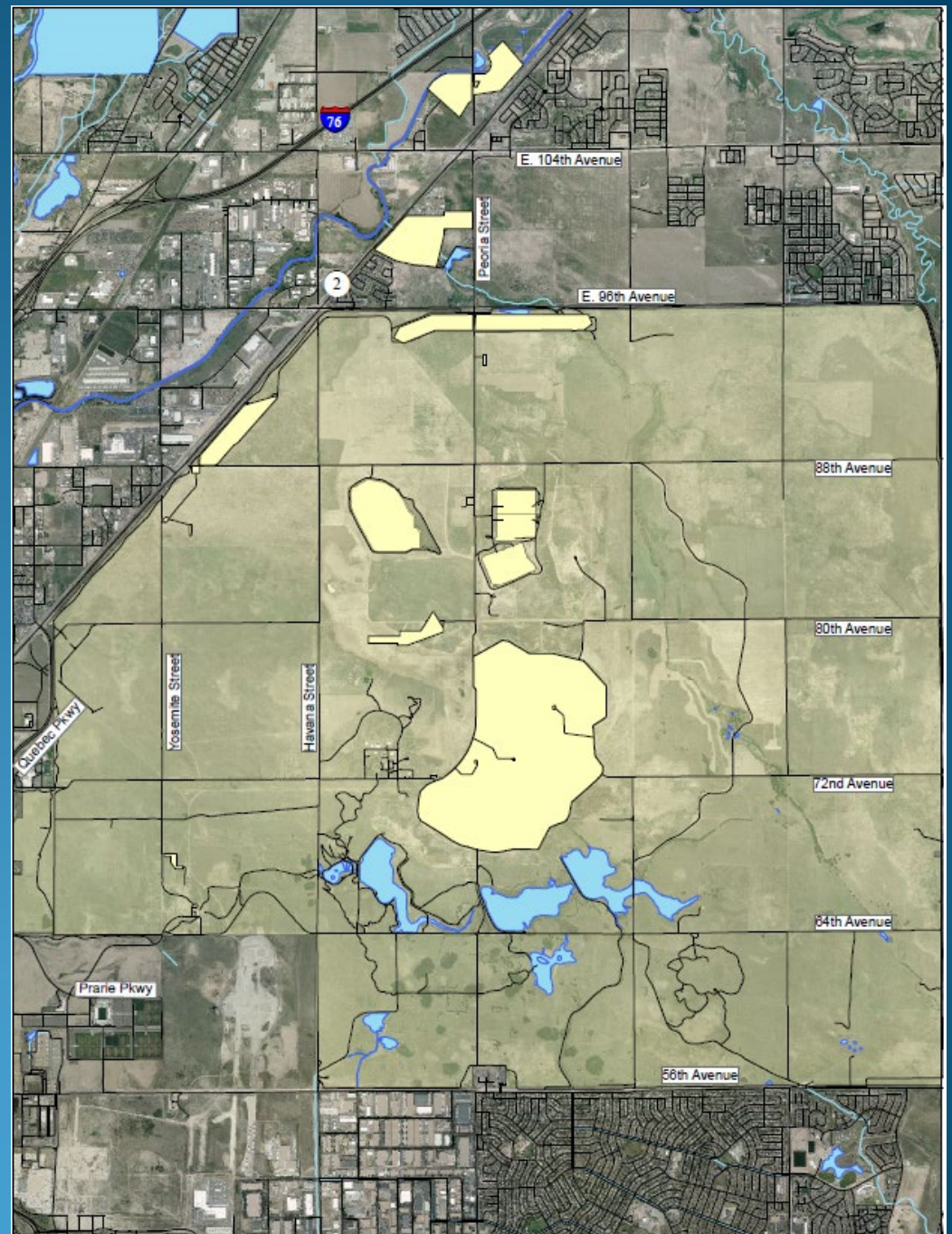


AGENDA

- Site Overview / Ongoing Operation & Maintenance
- 2019 Projects
 - Subsurface soil sampling
 - Additional groundwater sampling
- Groundwater Treatment & Monitoring
 - Treatment impact on groundwater plumes
 - New consolidated groundwater treatment plant
- Questions



Rocky Mountain Arsenal National Wildlife Refuge and Vicinity



ONGOING OPERATION & MAINTENANCE

- Comprehensive environmental cleanup completed in 2010; long-term operations and maintenance (O & M) of remedy facilities ongoing
- 2019 projects part of ongoing O&M
- Planned and conducted in cooperation with regulatory agencies
- Reflects ongoing commitment to:
 - Evaluate cleanup in light of new environmental standards
 - Ensure cleanup continues to perform as designed and remains fully protective of human health and the environment

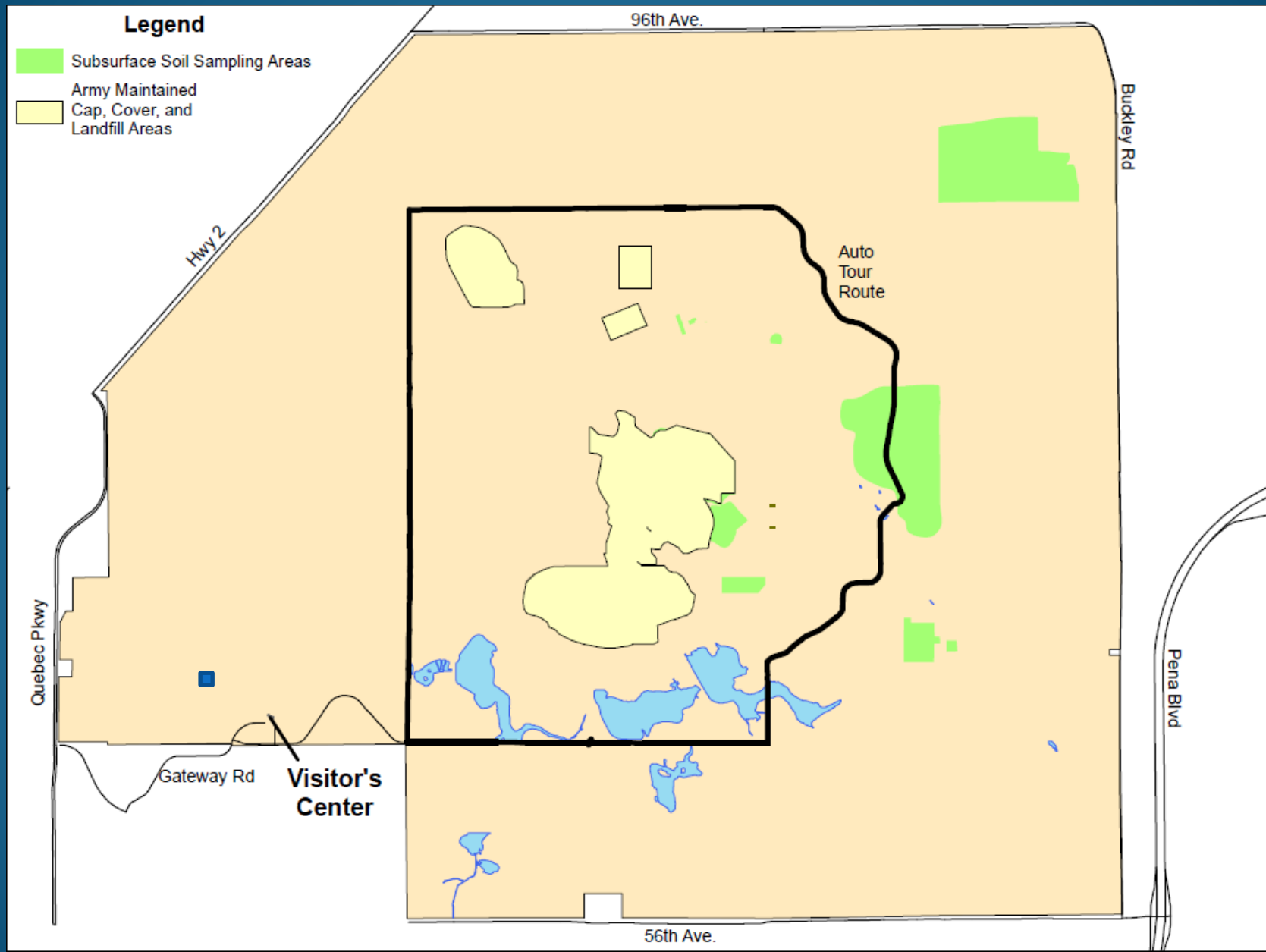
SUBSURFACE SOIL SAMPLING

- New, lower regulatory limits for chronic exposure to chemical agent compounds VX and Mustard
- RMA completed cleanup of chemical agent sites as part of comprehensive environmental cleanup
- Sampling efforts during the remedy certified that soil met chronic health levels in place at that time
- Additional subsurface soil sampling to confirm absence of agent at new, lower limits



2019 PROJECTS

SUBSURFACE SOIL SAMPLING AREAS



GROUNDWATER SAMPLING

- Groundwater sampling for three “emerging contaminants”
- New environmental standards and/or ability to detect at much lower levels than before
- Evaluating for:
 - PFAS (*perfluoroalkyl and polyfluoroalkyl substances*)
 - NDPA (*n-Nitrosodi-n-propylamine*)
 - 1,4 Dioxane

GROUNDWATER SAMPLING

Results and Next Steps

- PFAS
 - Initial sampling results show only one location (in central area of RMA) above health advisory
 - Will verify results through additional 2019 sampling
 - Confirm no significant sources at RMA
- NDPA
 - Detected in similar areas as other RMA contaminants
 - Added to list of contaminants routinely monitored

Both contaminants effectively treated by existing groundwater treatment systems.

GROUNDWATER SAMPLING

Results and Next Steps

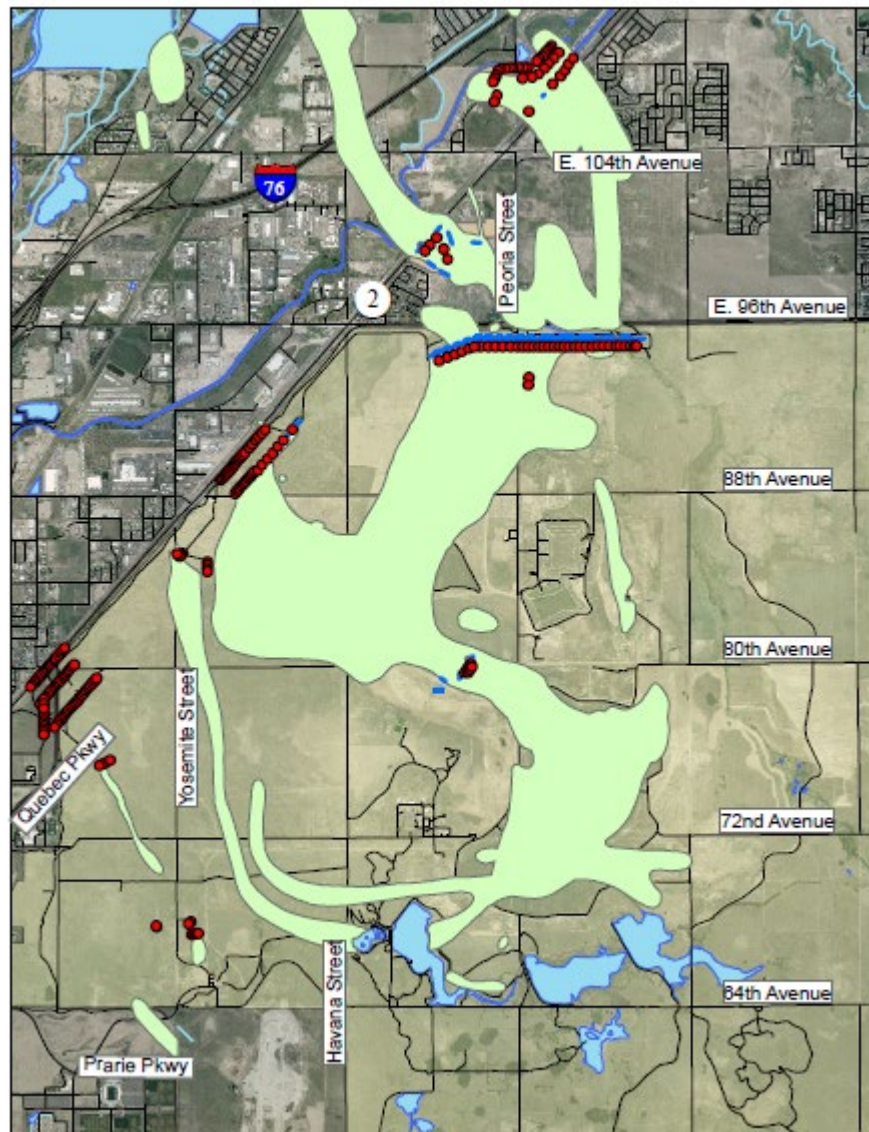
1,4 Dioxane

- Characterized source areas and plumes
- Detected in similar areas as other RMA contaminants
- Now on list of groundwater contaminants routinely monitored
- Evaluating range of options, including installing additional process to treat to standard

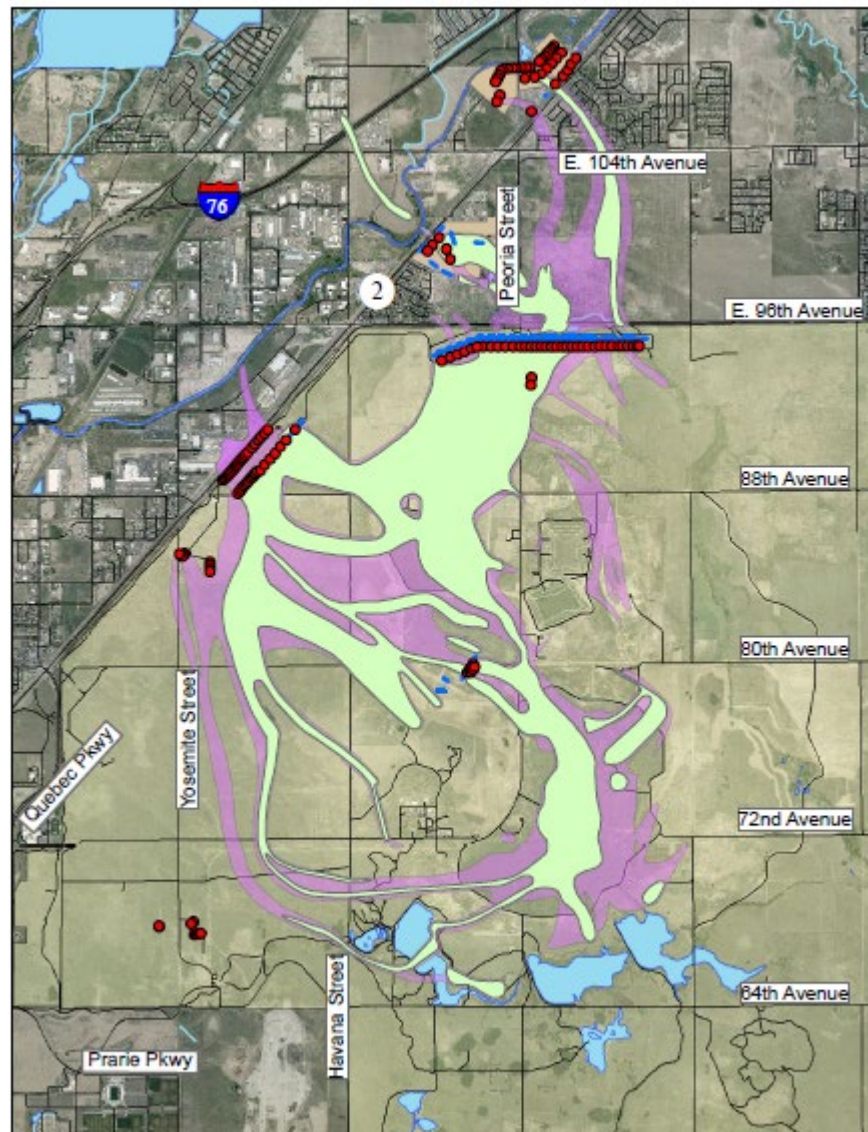
No one drinking groundwater with RMA contaminants above standards

TREATMENT IMPACT ON PLUMES

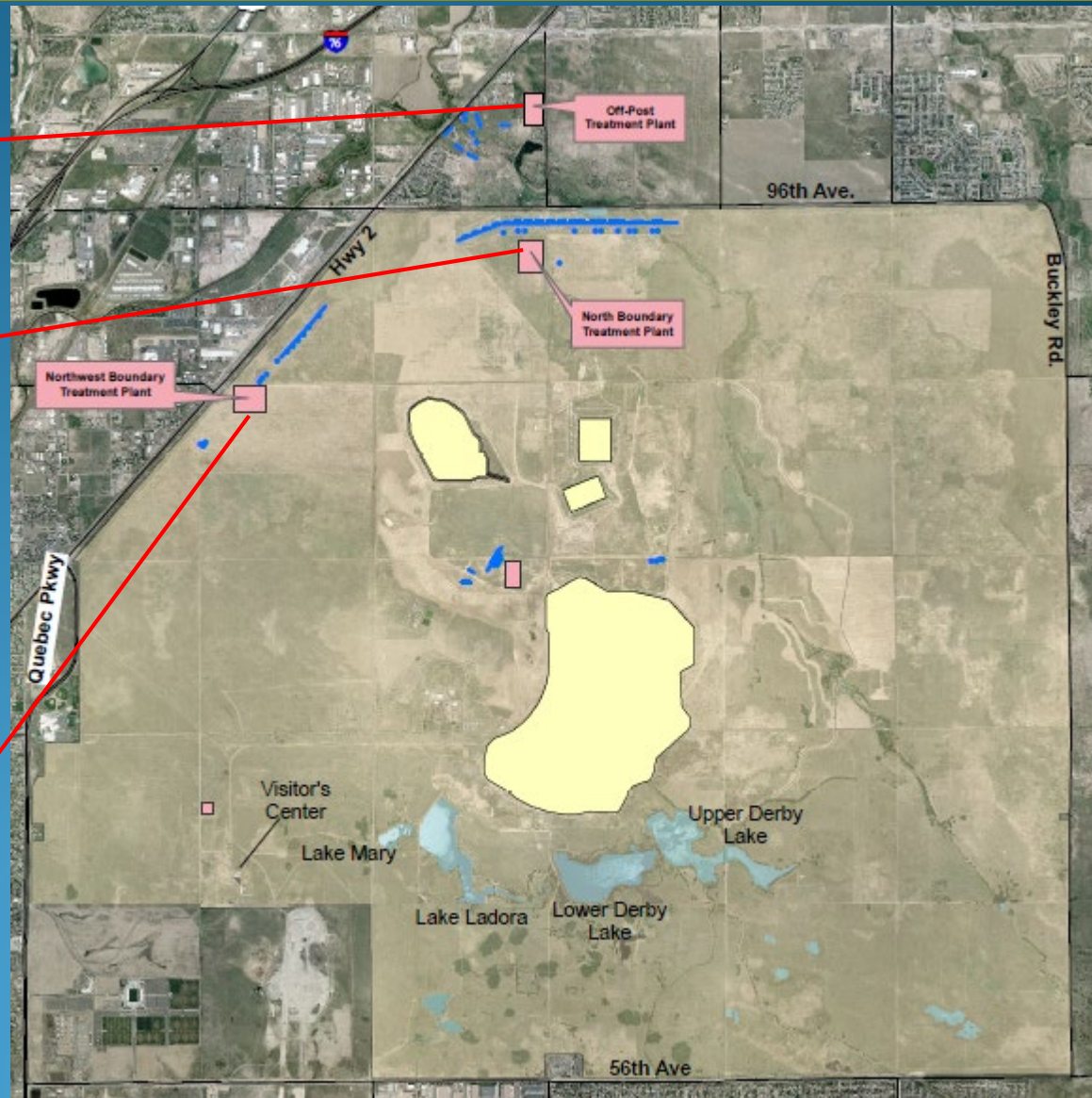
1994



2014



GROUNDWATER TREATMENT & MONITORING



CONSOLIDATED TREATMENT PLANT



- Consolidates three systems into one
- Improves efficiency of existing systems
- Provides capacity to add additional treatment processes, if necessary



SUMMARY

- The remedy remains protective of people, wildlife, and the environment;
- Significant progress has been made in cleaning up historic groundwater contamination;
- In partnership with regulatory agencies, the Army continues to evaluate, monitor, operate and maintain the remedy;
- The Army and Shell will be investing in a new groundwater treatment facility in the next few years to ensure the continuing success of groundwater cleanup.

Questions?

