

Kerr-McGee Chemical Corporation Jacksonville Superfund Site

Remedial Action Update

Community Update Meetings

January 31, 2024

12:30 – 1:30 p.m. and 5:30 – 6:30 p.m.

**U.S. Environmental Protection Agency and
Greenfield Environmental Multistate Trust,
Trustee of the Multistate Environmental Response Trust**

Welcome Instructions

- This meeting will be recorded.
 - By participating, you consent to be recorded.
- Please mute yourself during the presentation.
 - Zoom: use microphone icon
 - Phone: press *6
- Please unmute yourself to ask a question or to comment.
 - Zoom: use microphone icon
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- Questions or comments:
 - On Zoom, you may type questions or comments into the chat box.
 - For all, please introduce yourself when asking a question or making a comment.

Thanks for joining us.



Meeting Agenda

- Introductions
- Background and Overview
- OU1 Remedial Construction Phase 1 (completed)
- OU1 Remedial Design Summary
- OU1 Remedial Construction Phase 2
- OU2 (Deer Creek) Investigation
- Schedule
- Questions and Discussion

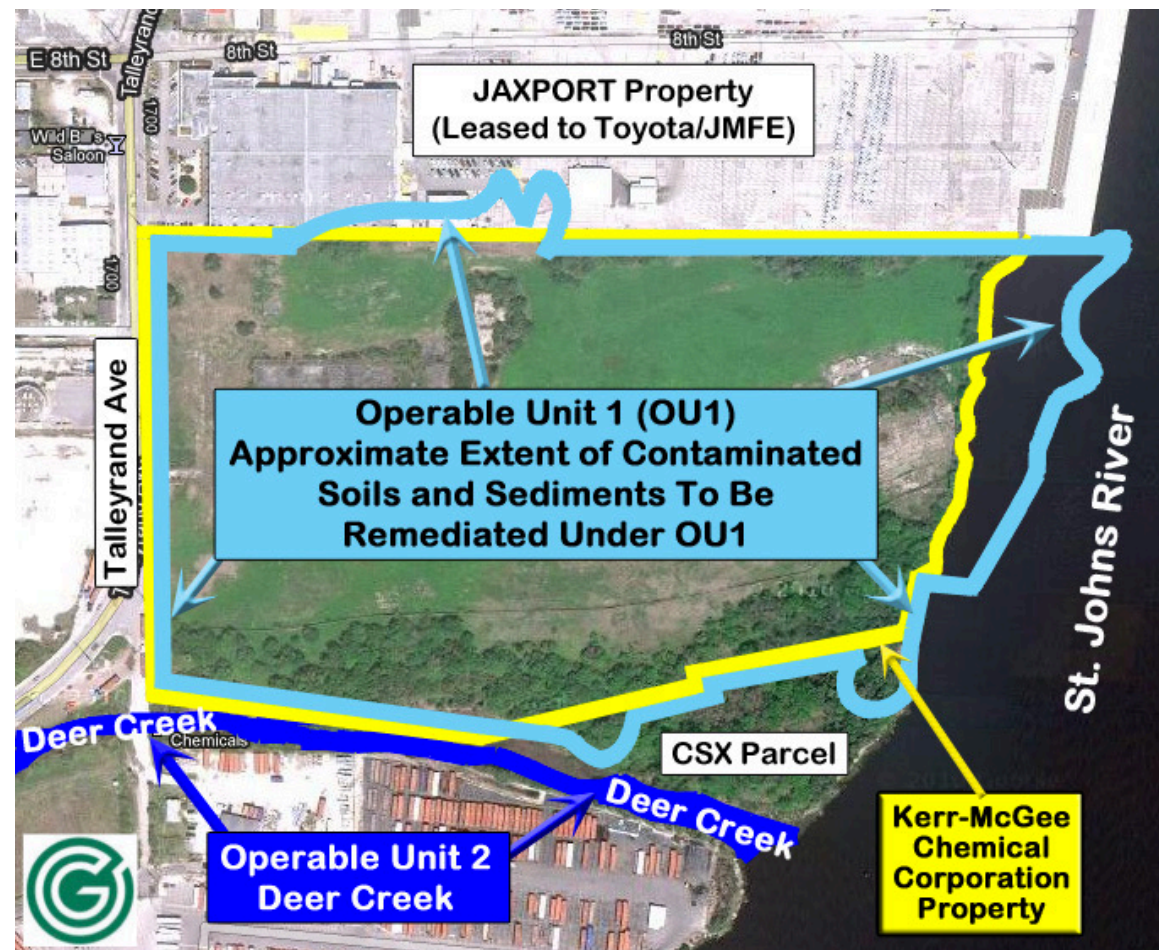


Introductions

- U.S. Environmental Protection Agency (EPA)
 - Charles King, Remedial Project Manager
 - L'Tonya Spencer-Harvey, Community Involvement Coordinator
 - Rosemarie Nelson, Community Involvement Coordinator
- Multistate Environmental Response Trust
 - Peter Cornais, Project Manager



Site Overview



- Former agricultural chemical (pesticide) manufacturing and formulation plant
- Period of operation: 1893 to 1978
- Uplands: 31.8 acres
- OU1: Uplands, 3 acres of St. Johns River sediments, and off-site impacts (JAXPORT and CSX)
- OU2: Deer Creek sediments and surface water

Site Background

- Remedial Investigation OU1 – 2006
- Risk Assessments OU1 – 2014 to 2016
- Feasibility Study OU1 – 2016
- Proposed Plan and OU1 Record of Decision – 2016
- Remedial Design and Design Investigations
 - Design Investigations – 2017 to 2019
 - Remedial Design – 2019 to 2024
- Remedial Construction – 2024 to 2026
- Deer Creek Investigation (OU2)
 - Remedial Investigation Work Plan – 2021
 - Remedial Investigation – 2024 to 2025



OU1 Remedial Construction (Phase 1)

- Started Phase 1 Construction in November 2020
- Completed Phase 1 Construction in March 2021:
 - Installation of stormwater control measures
 - Abandonment of monitoring wells
 - Installation of truck wash and administration area
 - Demolition of concrete foundations
 - Clearing and grubbing of majority of Site
 - Consolidated off-site contamination onto former KMCC property



Construction Entrance



Asphalt entrance road



Water fill station and truck wash pad

OU1 Remedial Design Components

- Groundwater Source Remedy
 - Soil Stabilization
 - To treat groundwater source area
- Sediment Remedy
 - Sediment Dredging and Bulkhead
 - To consolidate and contain contaminated sediments
- Soil Remedy
 - Soil Cap
 - On-Site Consolidation of Off-site Soil
 - To limit rainwater and prevent exposure
- Groundwater Remedy
 - Groundwater Containment System
 - To prevent discharge of contaminated groundwater to surface water bodies (St. Johns River and Deer Creek)

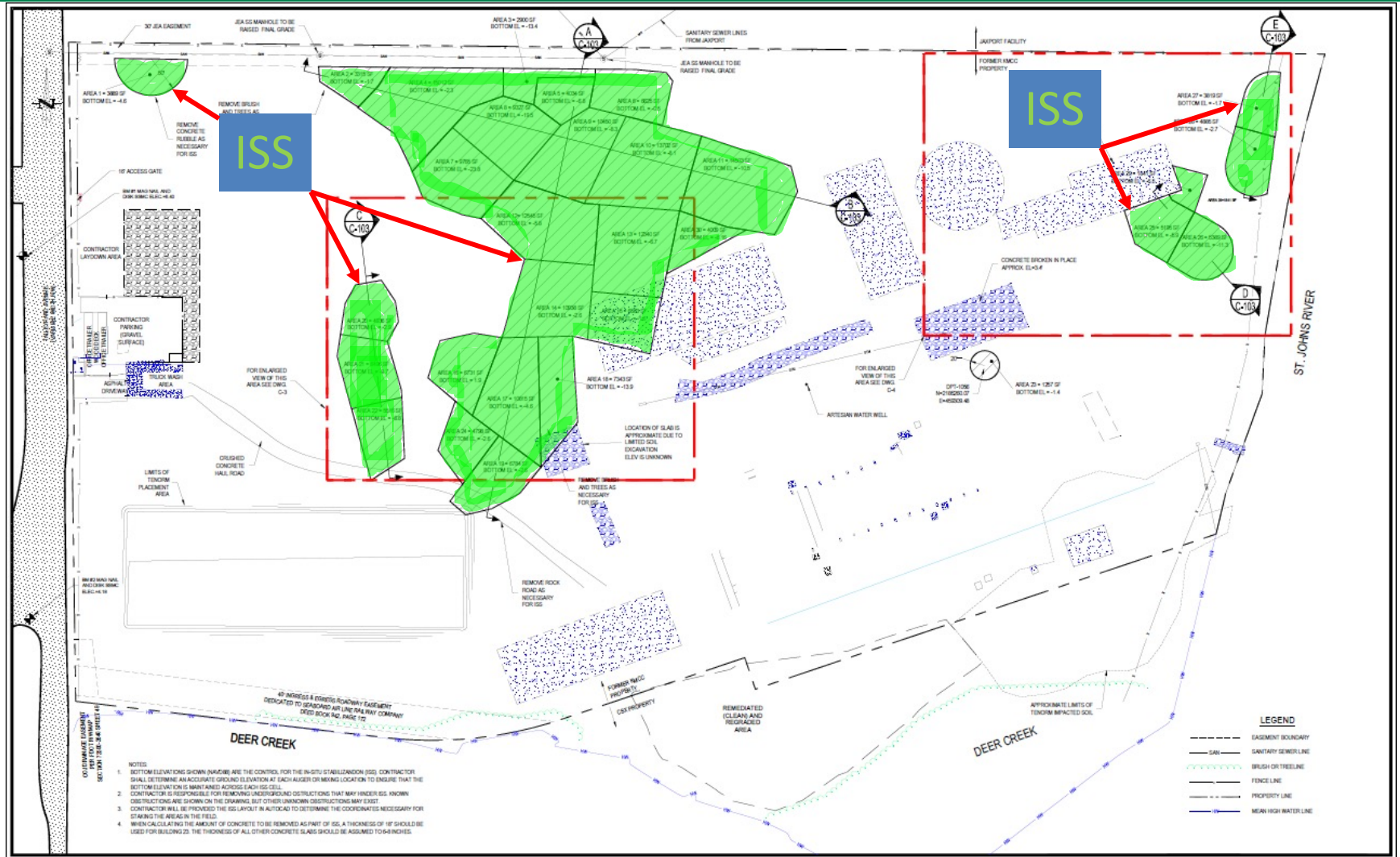


Groundwater Source Remedy

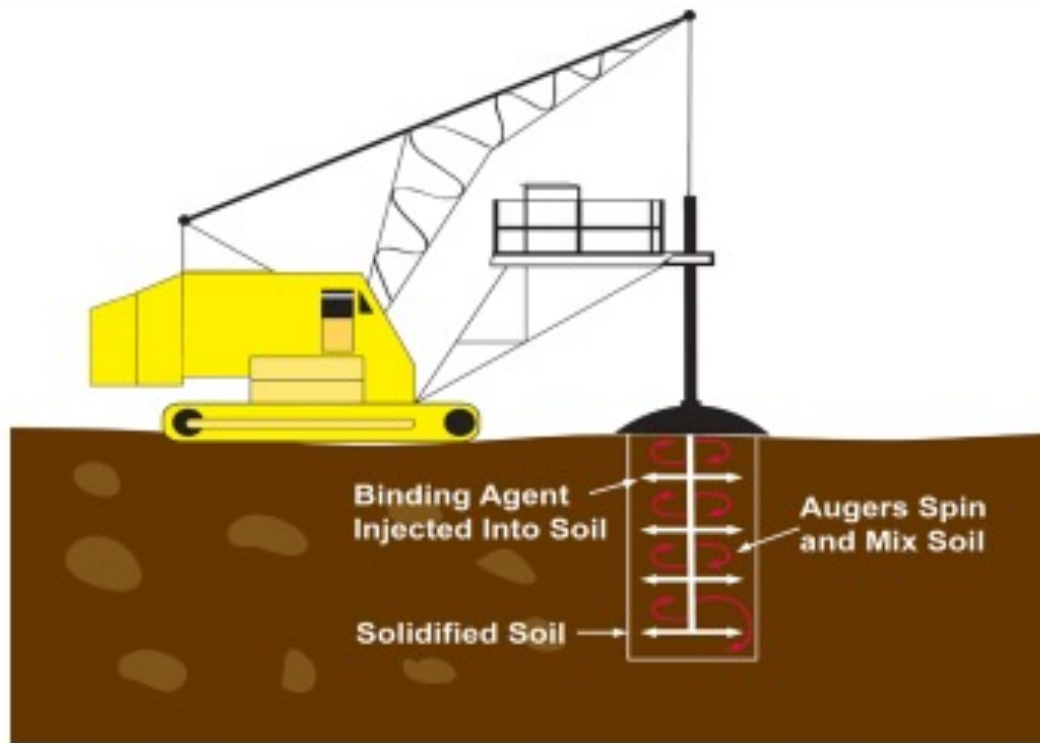
- **Remedy Objective:** in-situ stabilization and solidification (ISS) of contaminated soil (known as *source areas*) that could feed groundwater plumes
 - Cement will be mixed with equipment to solidify source areas so that groundwater plumes shrink (maximum hydraulic conductivity of 10^{-6} centimeters per second)
 - Soil concentration-based approach was used for ISS design, with FDEP input and EPA concurrence
 - Total treatment volume is 109,171 cubic yards
 - Estimated treatment area is 5 acres



In-situ Stabilization and Solidification – 100% Design



ISS – Implementation



A crane holds up a soil-mixing auger as it's used to treat contaminated soil and solidify it in place at an unrelated site.

Sediment Remedy

- **Remedy Objective:** installation of environmental bulkhead to contain contaminated sediment in St. Johns River
 - Provide structural support for backfill materials
 - Reduce migration of groundwater with chemical of concern concentrations above levels that are protective of ecological receptors in St. Johns River



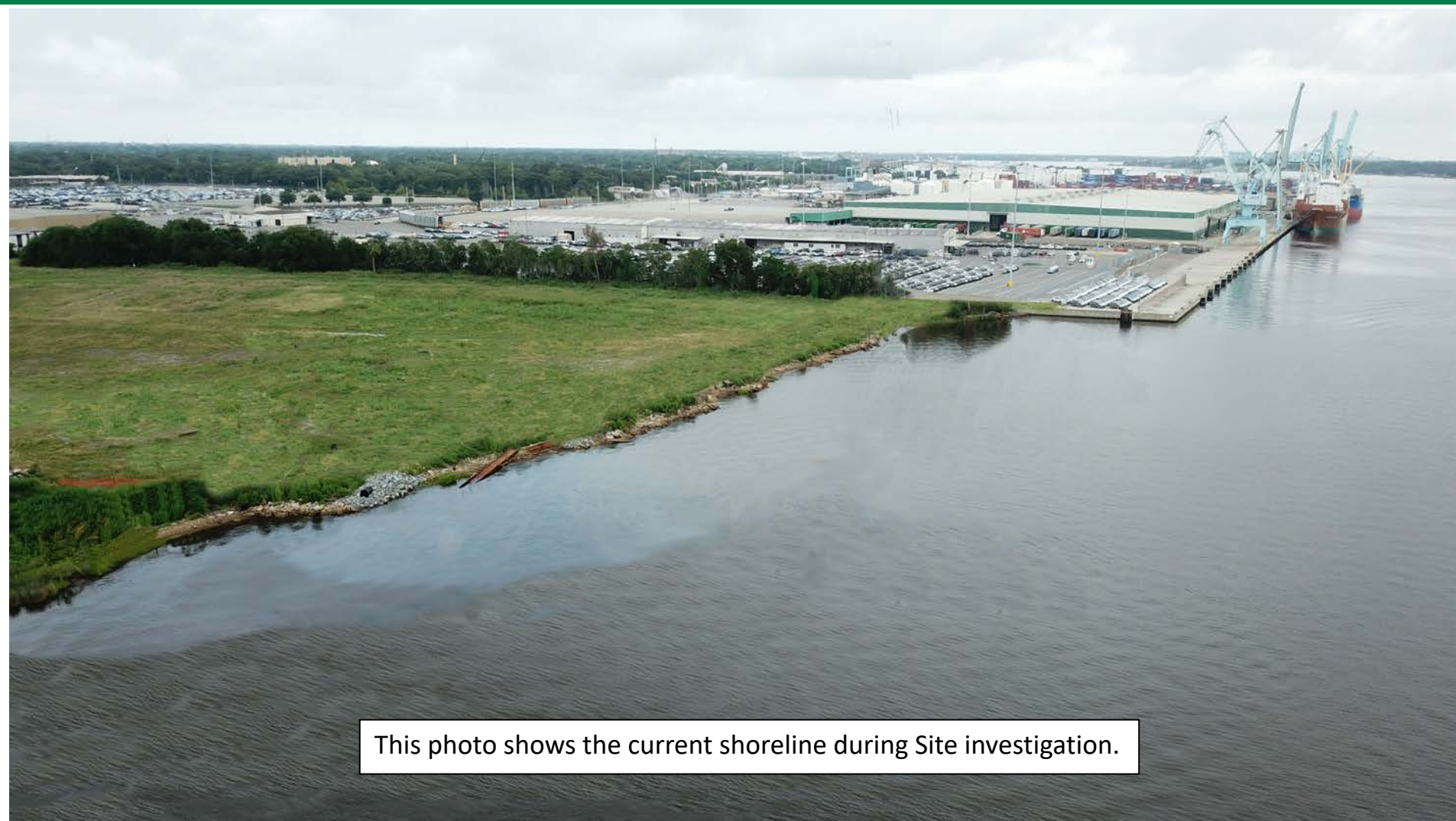
An environmental bulkhead is installed at an unrelated site.

Bulkhead Limits

- Horizontal limits
 - Approximately 85 feet east of Site's shoreline
 - Parallel to and approximately 140 feet from edge of federal navigation channel
- OPEN CELL SHEET PILE™ Bulkhead
- Coating to extend design life



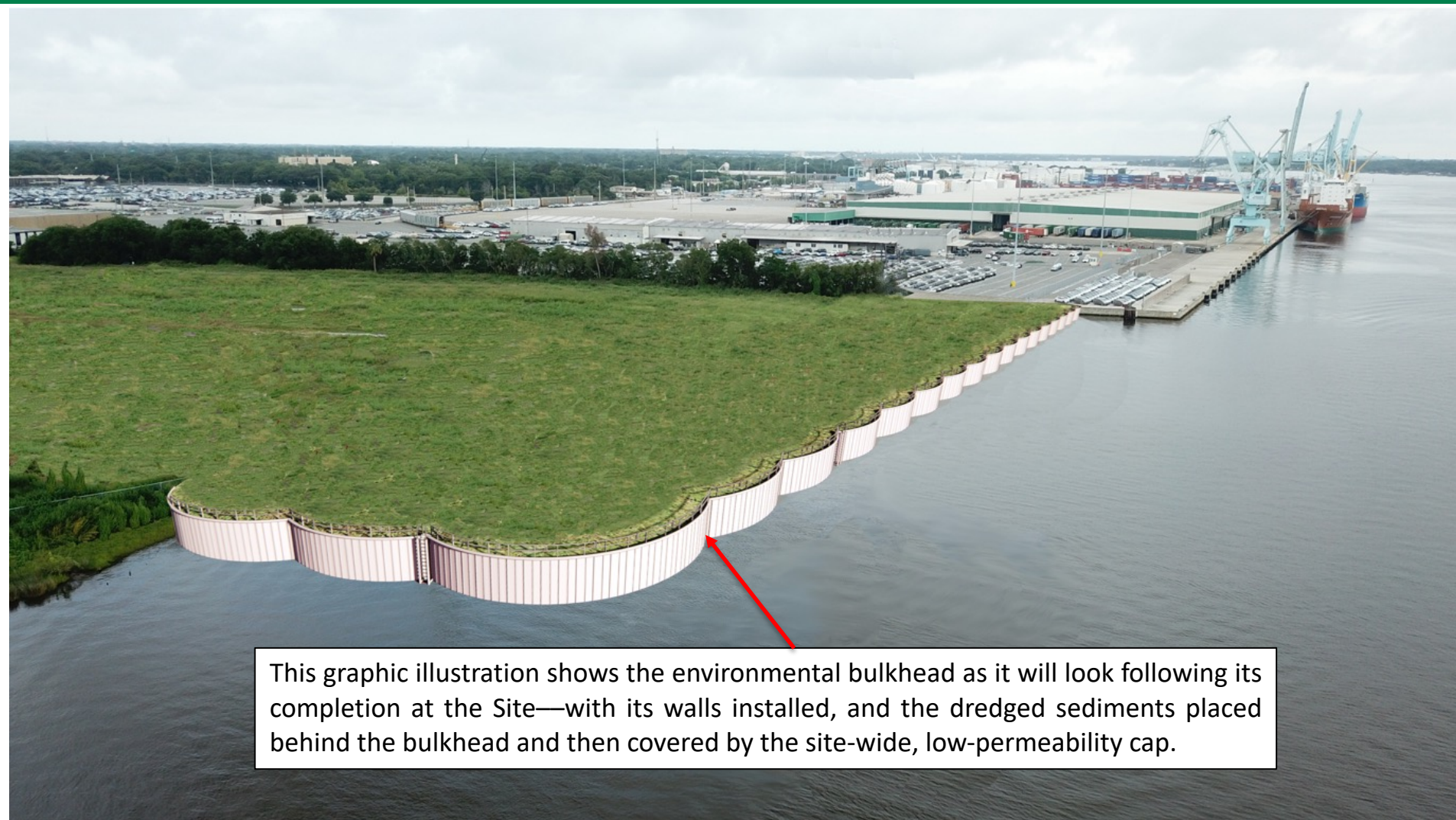
Current Shoreline



This photo shows the current shoreline during Site investigation.



Bulkhead Rendering



This graphic illustration shows the environmental bulkhead as it will look following its completion at the Site—with its walls installed, and the dredged sediments placed behind the bulkhead and then covered by the site-wide, low-permeability cap.

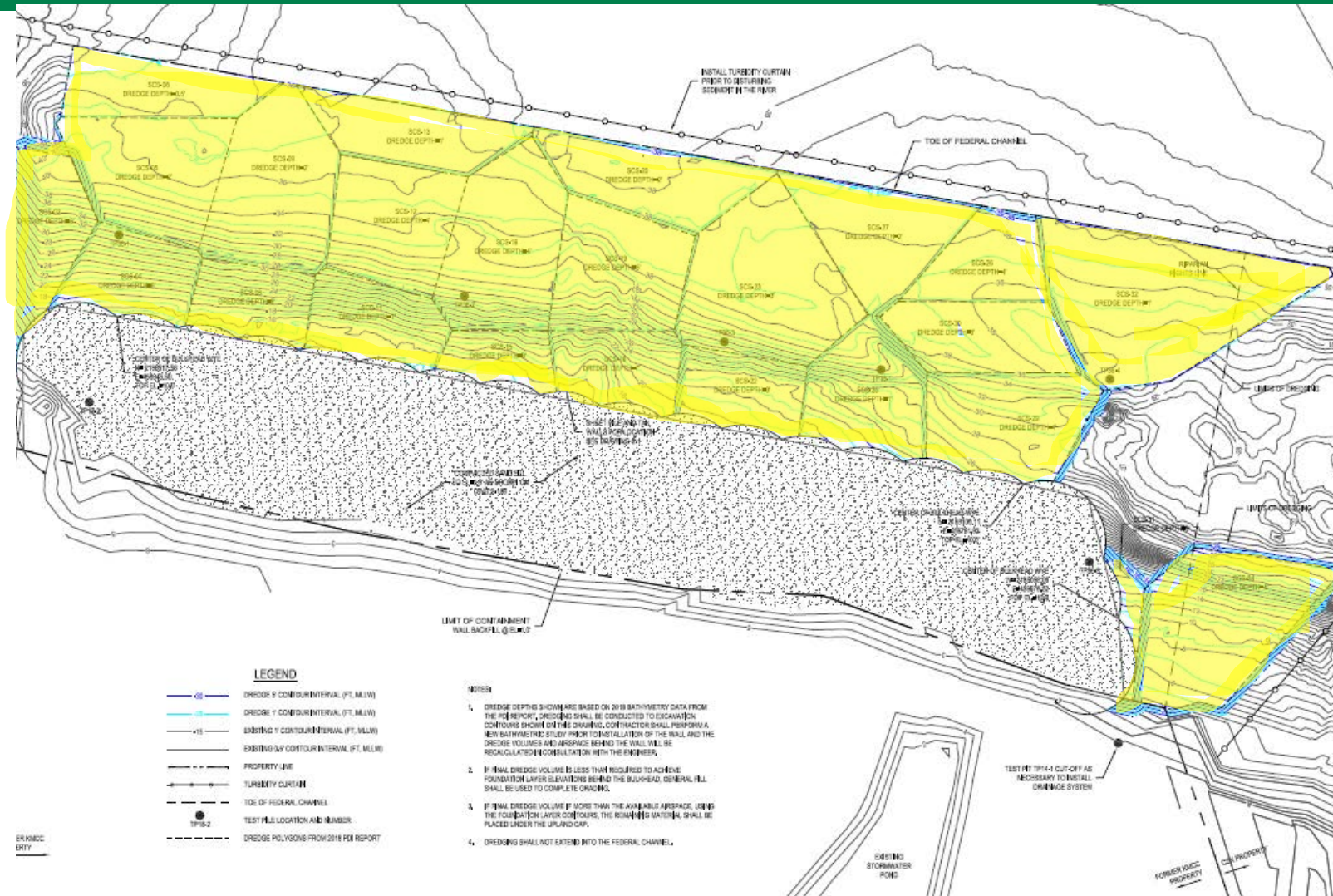


Sediment Dredging

- **Remedy Objective:** dredge and consolidate contaminated sediment currently located outside planned environmental bulkhead
 - Dredging limits were based on EPA Record of Decision (ROD) cleanup levels and pre-design investigation (PDI) sampling results.
 - Dredging depths range from 1 to 10 feet below existing surface.
 - Volume of contaminated sediment and debris is approximately 13,705 cubic yards.
 - All debris will be placed behind bulkhead, or placed under upland cap or, if not suitable for placement under cap, disposed of off-site.



Sediment Dredging

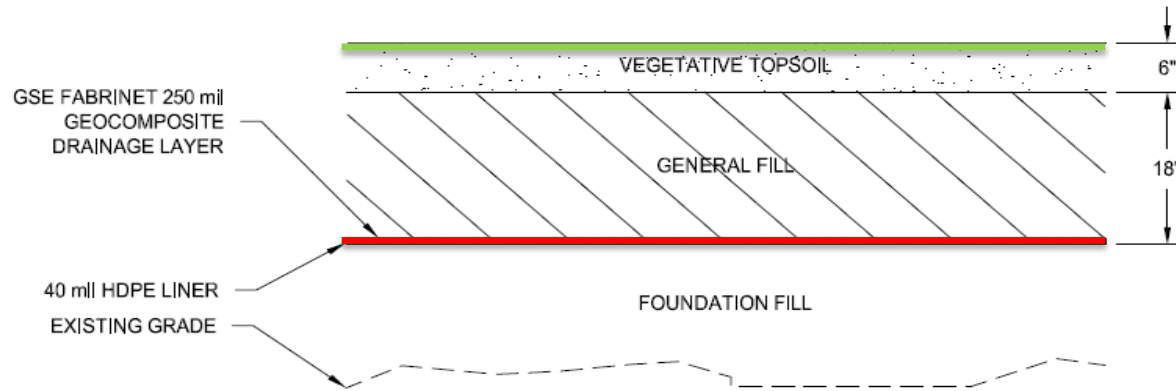


Soil Remedy

- **Remedy Objective:** installation of a cap to
 - (1) prevent exposure to soil above ROD cleanup levels that are protective for commercial and industrial use and
 - (2) limit infiltration
- Engineered cap is designed to:
 - limit precipitation from reaching groundwater
 - provide minimum required slope to manage surface water runoff and drainage
 - prevent direct exposure (two feet of clean fill)



Low-Permeability Cap



Low-permeability cap consists of:

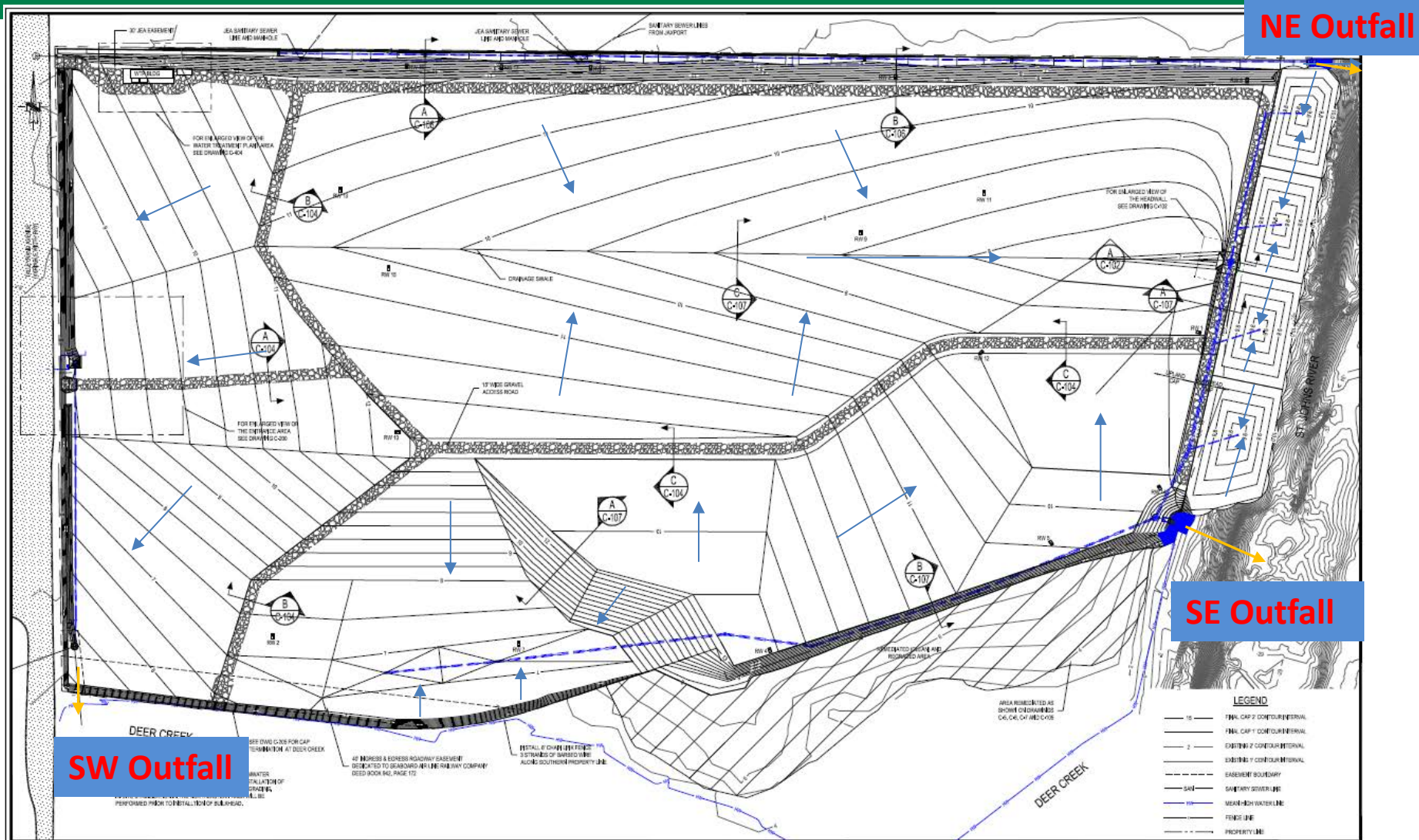
- high-density polyethylene (HDPE) geomembrane liner overlain with a geocomposite drainage layer (GDL)
- two-foot protective soil layer preventing direct exposure
 - ✓ top six inches of soil capable of supporting vegetative growth to prevent erosion

Example Liner Installation



This plastic liner is similar to the lining to be installed as part of the construction of the site-wide, multilayered, low-permeability soil cap. Atop the liner, clean fill will be placed, and then a grassy layer will be installed. This photo shows a liner being positioned at the Site during the installation of a sedimentation basin in 2020.

Cap Layout and Stormwater Management



Stormwater Management Design

- Designed for 25-year, 24-hour storm
 - Oversized to account for 100-year, 24-hour storm
- 3 outfalls (2 to St. Johns River, 1 to Deer Creek)
- Water flow to central swale and northern ditch flowing east via piping
- Runoff will discharge at NE and SE property corners into St. Johns River. Tideflex check valve will prevent tidal flow into stormwater system.

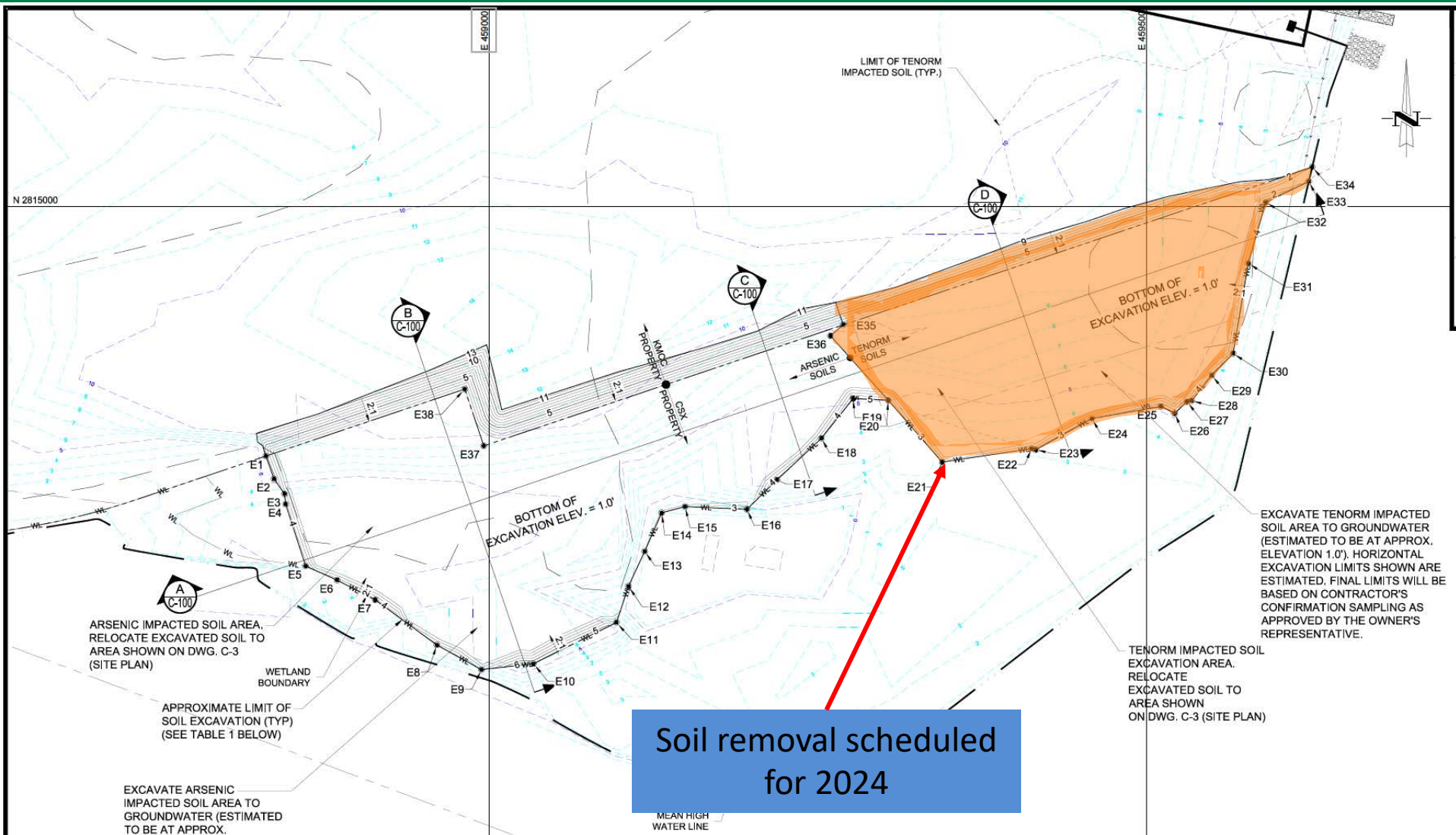


Soil Remedy

- **Remedy Objective:** removal of construction debris and contaminated soil from CSX property, and on-site consolidation
 - Concrete debris will be excavated, processed, and consolidated under final cap on the former KMCC property.
 - CSX property will be backfilled and restored with vegetation.



Soil Removal from Adjacent CSX Property



Soil removal scheduled
for 2024

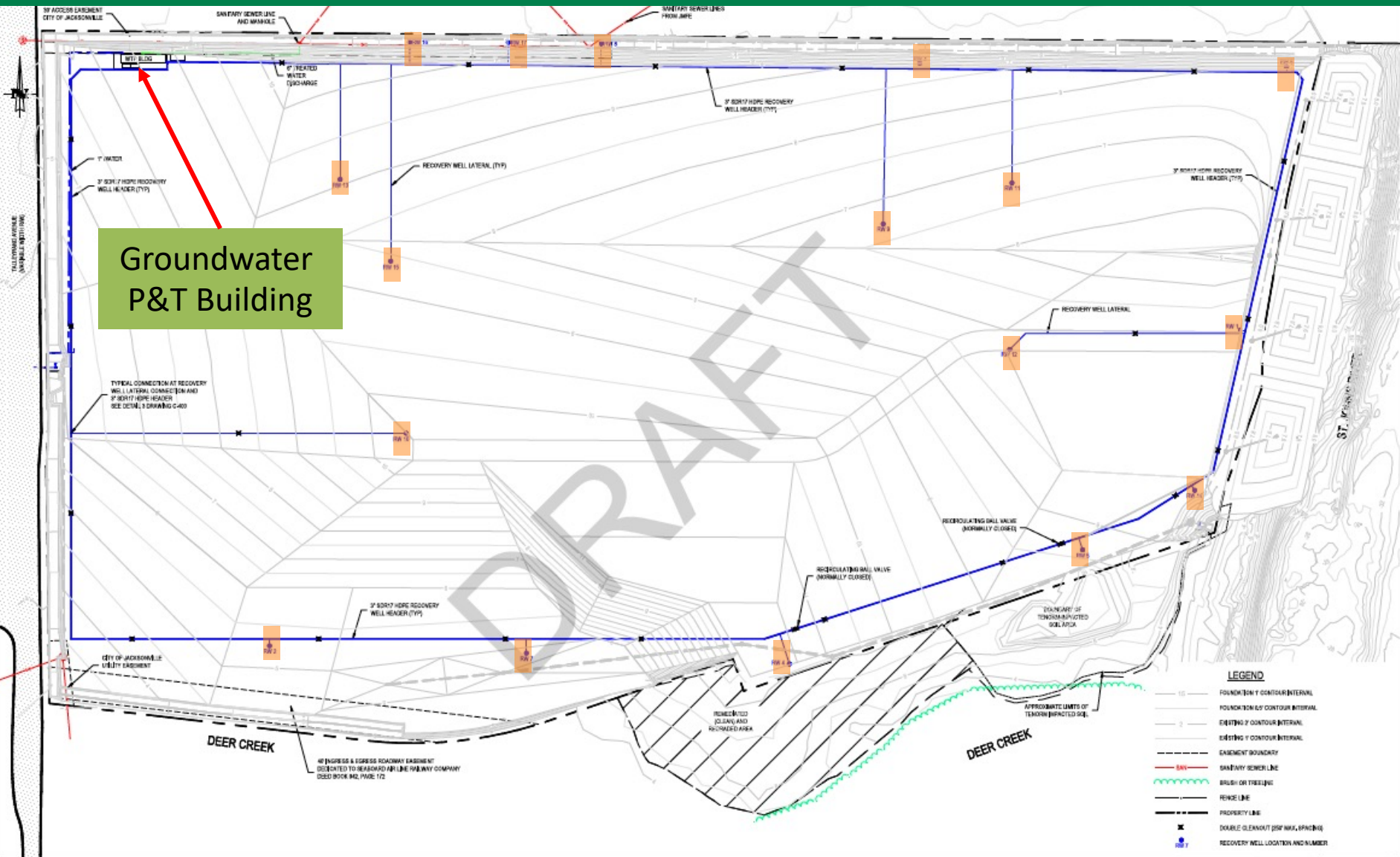


Groundwater Remedy

- **Remedy Objective:** Prevent discharge of contaminated groundwater to St. Johns River and Deer Creek with a groundwater containment system
 - Pump and Treat (P&T) system (28.5 gallons per minute) is designed to capture groundwater above cleanup levels to prevent discharge to surface water
 - Groundwater contaminant concentrations will decrease naturally in time; pumps will be turned off once sampling indicates that groundwater plume is able to decrease on its own and groundwater cleanup can be achieved in a reasonable timeframe
 - P&T system is designed to meet JEA requirements prior to discharging water to the sewer, which requires JEA approval



P&T System – Recovery Well Layout

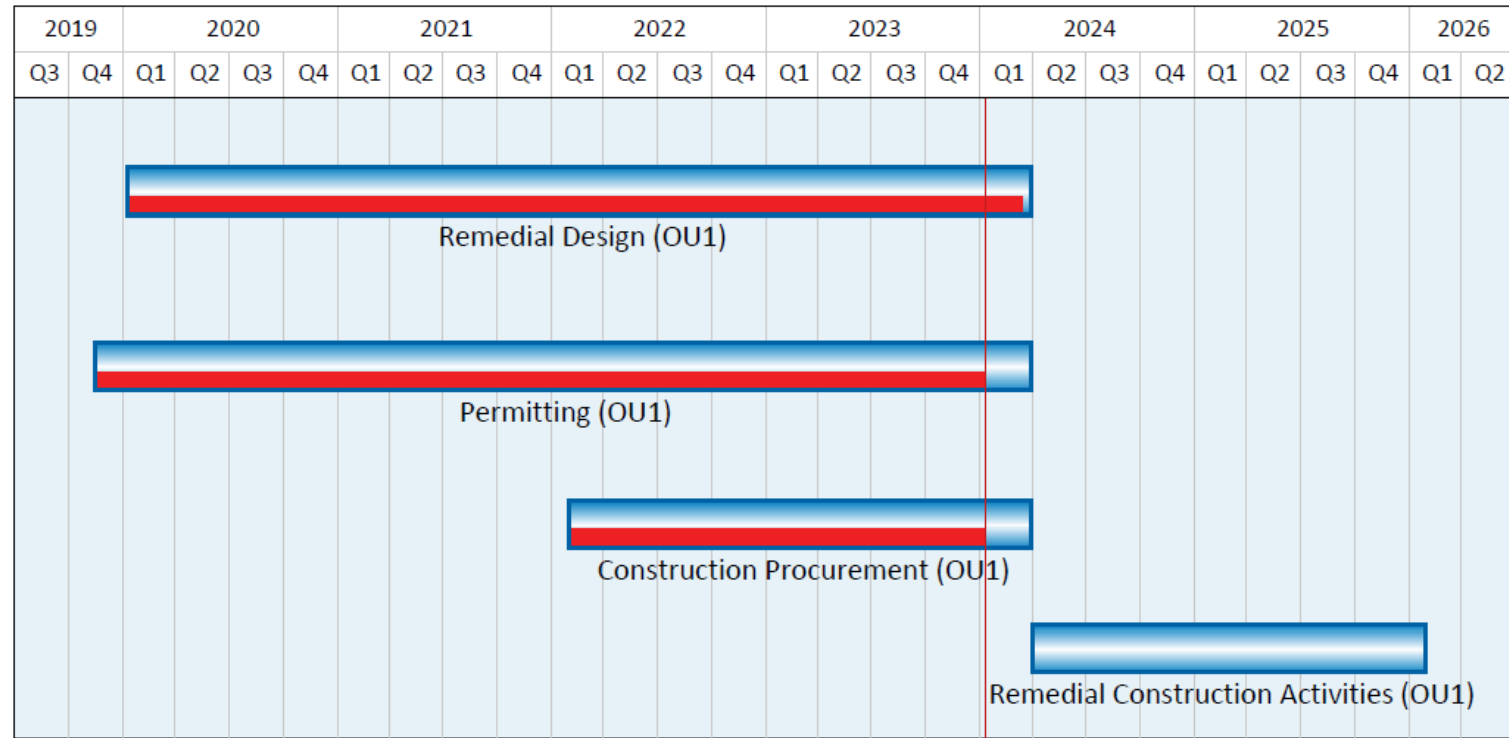


P&T System Concept



This building is comparable to the kind of structure to be built as part of the pump and treat system. Inside the building, recovered groundwater will be processed through carbon filtration to remove contaminants before its release to the JEA's wastewater treatment system.

OU1 Design and Construction Schedule



- Remedial design to be complete in February 2024
- Remedial construction to start in 2024

OU1 Remedial Action Construction

- Currently scheduled for 2024 and 2025
- Multistate Trust will provide updates via website <https://jacksonville.greenfieldenvironmental.com>
- Construction manager prepared construction plans in 2023, and bid major phases of work
- Currently in process of securing contracts with selected subcontractors



Community Health and Safety

- Health and Safety Plan
- Perimeter air monitoring
- Traffic control
- Site access and security
- Status updates



**TSP / PM10
Filter-Based Sampler**

On-Site Worker Health and Safety

- Daily meetings
- Health and Safety Plan
- Training of Site workers
- Personal protective equipment
- Worker air space monitoring



Air Monitoring

- Air Quality Monitoring Plan
 - Developed action levels in 2020 Air Monitoring Plan
 - Plan completed and approved
 - Implemented during Phase 1 of construction (2020–2021)
- Continuous air monitoring during remedial action construction
 - Three fixed locations to protect community
 - One mobile location placed near construction work
 - Backup equipment on-site for redundancy



Perimeter Air Monitoring Locations



Dust Mitigation

- Apply water to minimize dust
- Cease or alter work on windy days
- Monitor dust on-site and perimeter

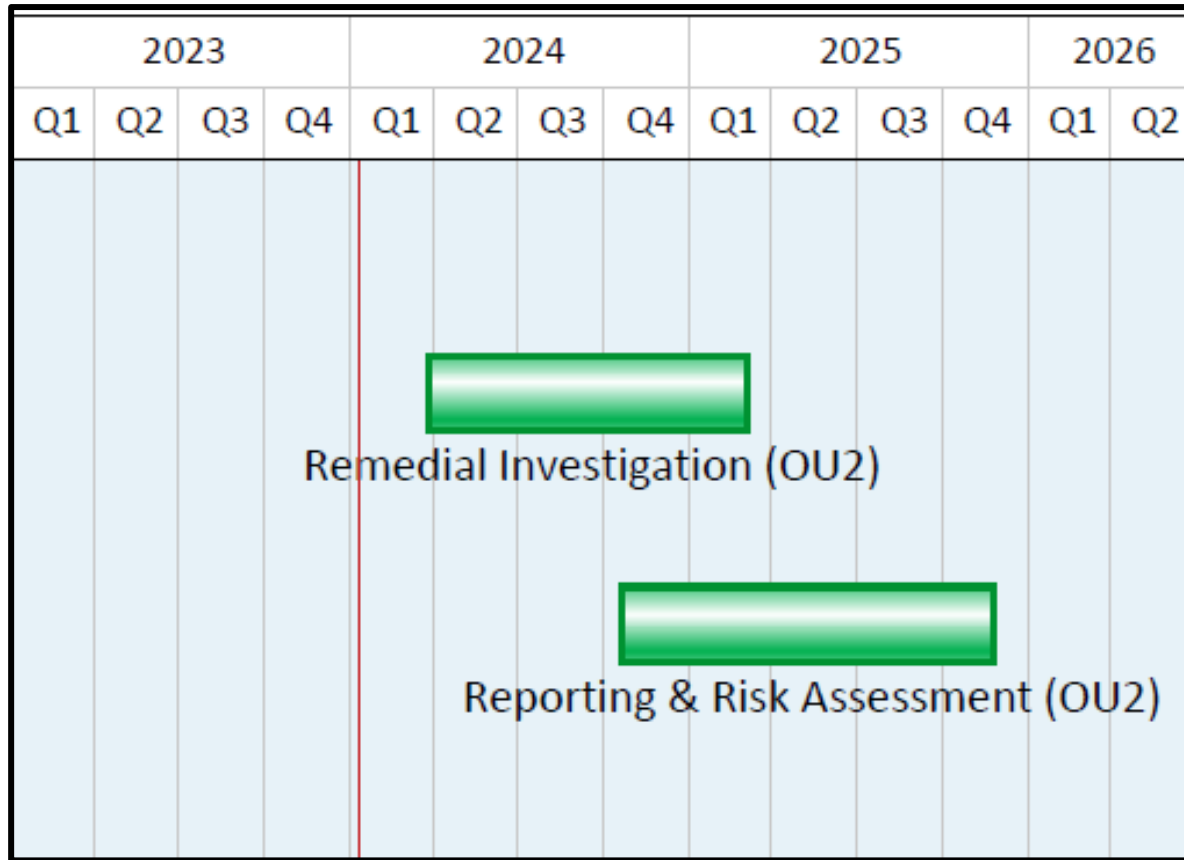


OU2 Background and Status

- OU2 is defined as Site-related sediment and surface water contamination in Deer Creek.
- Deer Creek flows along southern boundary of a CSX property located to south of former KMCC property.
- Chemicals identified in ROD as used or produced by manufacturing activities at Site include organochlorine pesticides, metals, sulfuric acid, and volatile organic compounds.



OU2 Schedule



- Remedial investigation to begin in April 2024



OU2 Site Overview



OU2 Remedial Investigation



Questions?

- Website <https://jacksonville.greenfieldenvironmental.com/>
- Contact Info:
 - EPA
 - Charles King – Remedial Project Manager
 - 404-431-1755
 - King.CharlesL@epa.gov
 - FDEP
 - Dean Cox – Environmental Consultant
 - 727-686-6502
 - Dean.Cox@floridadep.com
 - Multistate Trust
 - Peter Cornais – Project Manager
 - 904-512-6739 (leave a voice message)
 - PC@g-etg.com

