

Racer Trust CVO Re-development Cleanup

Kevin Lund, PE, CPG

Michigan Department of Environmental Quality

Beth Landale, PE

GHD (Formerly CRA)

October 1, 2015

Novi, Michigan



Outline

- Bankruptcy Settlement Agreement
- What is RACER?
- Part 201 vs RCRA Corrective Action
- Site History
- CSM
- Land Use Restrictions
- Interim Measure
 - PAOC 23
 - PAOC 18
 - Collaboration



GM Bankruptcy Settlement Agreement

June 2009 to October 2010



How the RACER Trust Was Created

- Federal and State environmental regulators used in-house and outside experts to determine necessary remedial and administrative costs for each site
- Largest environmental response trust in any bankruptcy case to date



Why the States and the U.S. Entered Into the Trust

- } Avoids unaddressed contamination and abandoned properties in bankruptcy
- } Promotes property redevelopment and other economic and employment opportunities
- } Returns property to municipal/city tax rolls
- } Not Many Other Attractive Options....



Working Together

RACER[™]

Key Elements

- RACER conducts and pays for cleanups.
- Cleanups approved by state and/or federal regulatory agencies.
- RACER can sell or lease properties even before cleanups begin or are completed, as long as RACER access is guaranteed.
- RACER's goal is to obtain "No Further Action" letters from environmental regulators for all locations where cleanups are required.



Our Missions Align



Our Mission >



- > Environmental Cleanup
- > New Jobs
- > Partnerships with Communities



The Michigan Department of Environmental Quality promotes wise management of Michigan's air, land, and water resources to support a sustainable environment, healthy communities, and vibrant economy.



RCRA CA and Part 201

RCRA/Part 111 vs. Part 201

- Liability scheme
- Environmental protection standards, including:
 - September 2012 criteria
 - Background soils
 - Vapor intrusion MIOSHA provisions
 - EPA VI Guidance
- Waste classification
- Administrative processes, including:
 - Terminology
 - Reporting/Tracking
 - 525 Deed Notices





We Can Do It!



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WAR PRODUCTION CO-ORDINATING COMMITTEE



CVO Partnership

RACER
Trust

Redevelopment
Bruce Rasher

Remediation
Grant Trigger
Dave Favero

GHD
Beth Landale, PE

MDEQ

Remediation and Redevelopment Division

Mitch Adelman
Kevin Lund, PE (Project Manager)

Michael McClellan

**Hazardous Waste Section, Office of Waste Management and
Radiological Protection**

Deb MacKenzie-Taylor
John McCabe
De Montgomery



Area & Site History



Area & Site History

- Area developed as part of the war efforts
- Historic filling practices (1940's & 1950's) have impacted soil and groundwater
- CVO Property was used as storage and was not developed (current building) until 1959
- Owned/Operated by several parties since the 1940's



Impacts

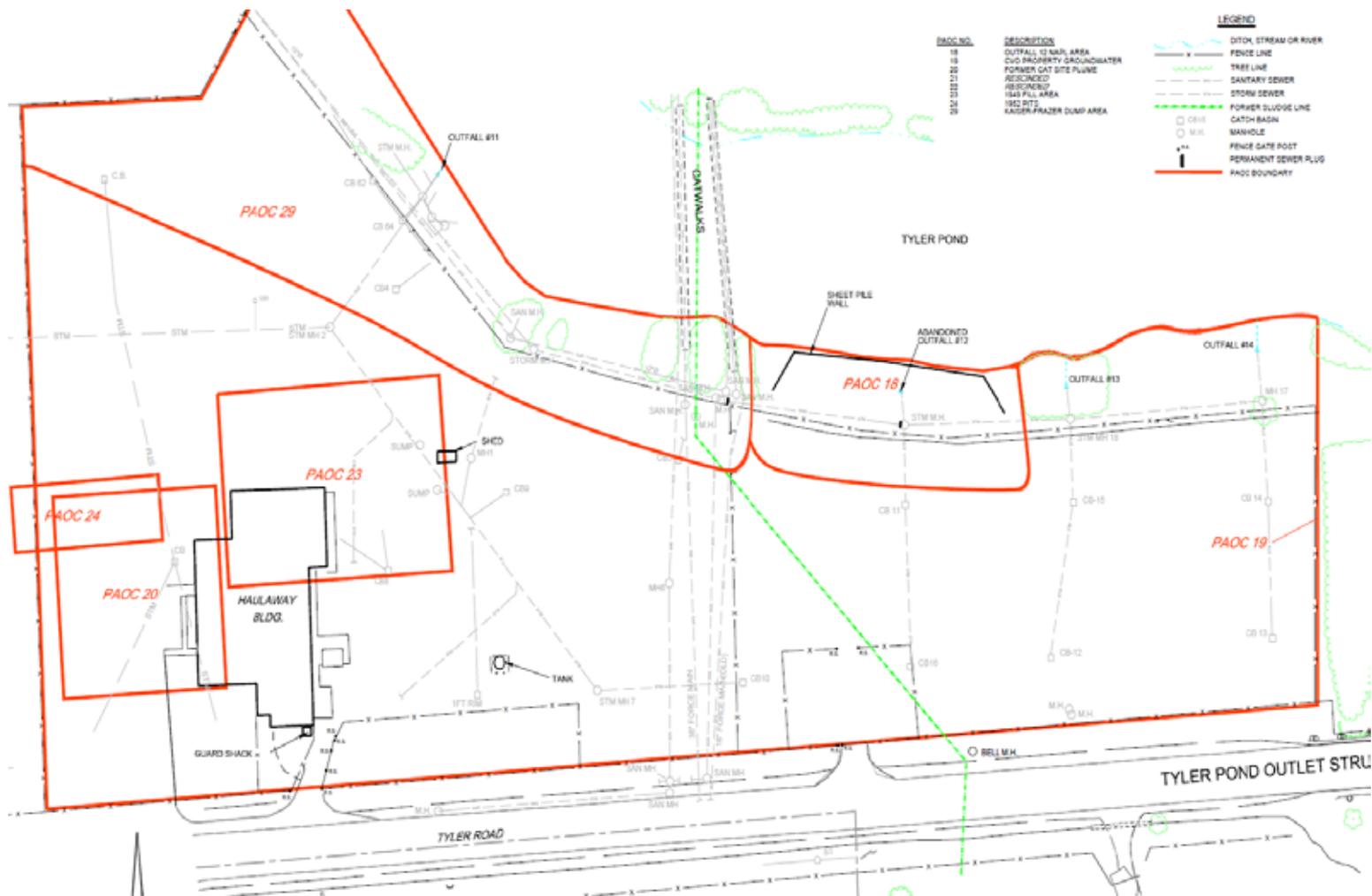
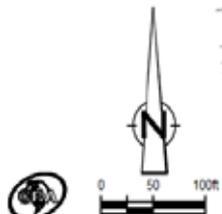


figure 1.3

PAOC LOCATIONS - REVISED
 SITE SUMMARY REPORT
 FORMER GENERAL MOTORS COMPANY VEHICLE OPERATIONS PROPERTY
 Ypsilanti, Michigan



Impacts

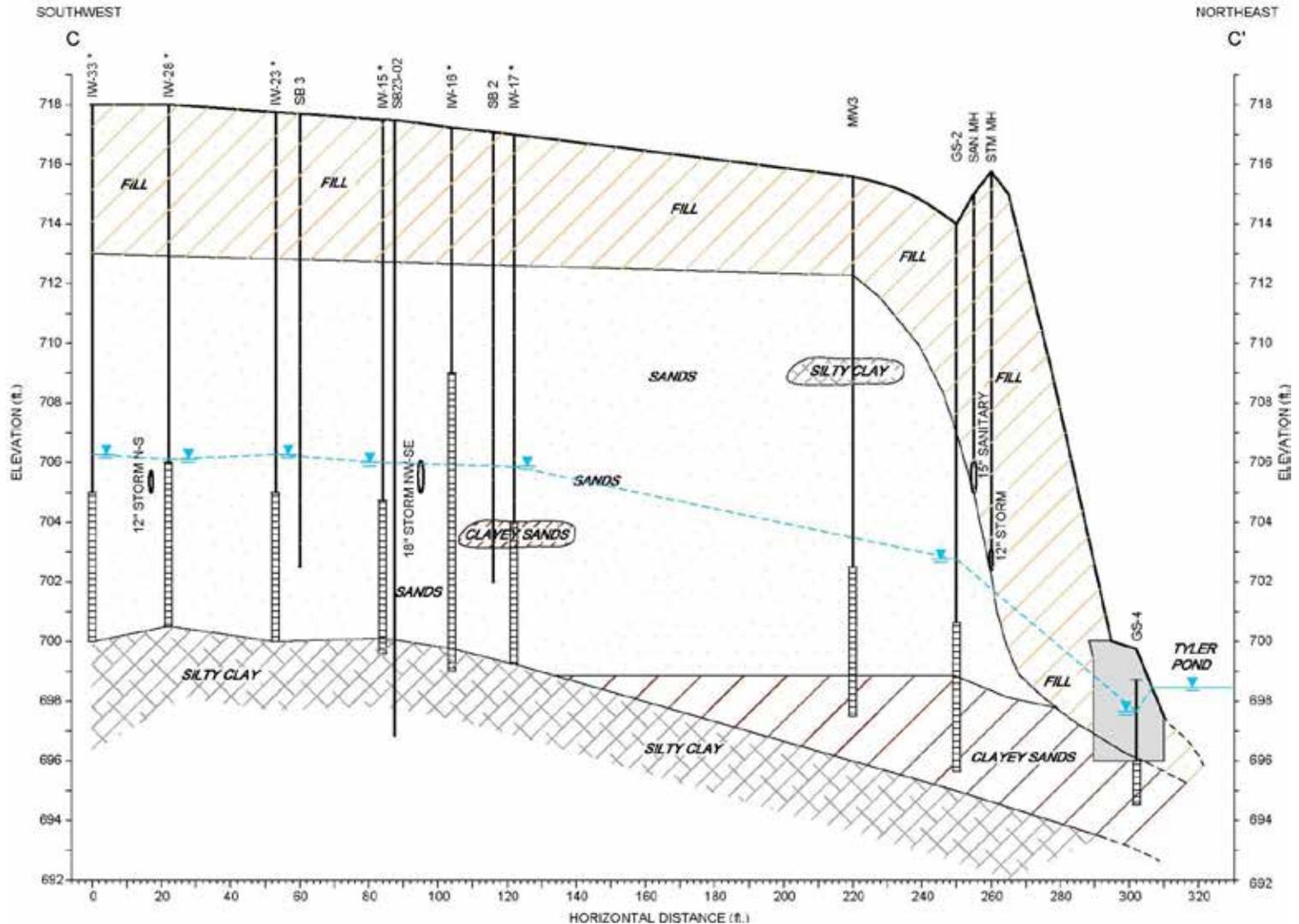
- Historic dumping has caused contamination
- Two source areas of CVOCs
 - PAOC 23
 - Partially beneath building onsite
 - PAOC 18
 - DNAPL identified as ongoing source for GW venting to surface water > acute GSI



Impacts



Conceptual Site Model



Declaration of Land Use or Resource Use Restrictions

Land Use Prohibitions. ITI prohibits all uses of the Property that are not compatible with nonresidential land use category under MCL 324.20120a(1)(b) and generally described in the Description of Allowable Uses attached to the Deed.

Activities Prohibited. ITI shall prohibit activities on the Property that may result in exposures above the nonresidential land use category. These prohibited activities include:

No drinking water wells may be installed or used.

No Groundwater Extraction Wells

Relocation of impacted soil

Consider Vapor Intrusion

Can't store hazardous waste

Part of the PPA

Binding on ITI

RACER Trust and DEQ access to enforce restrictions



Impacts

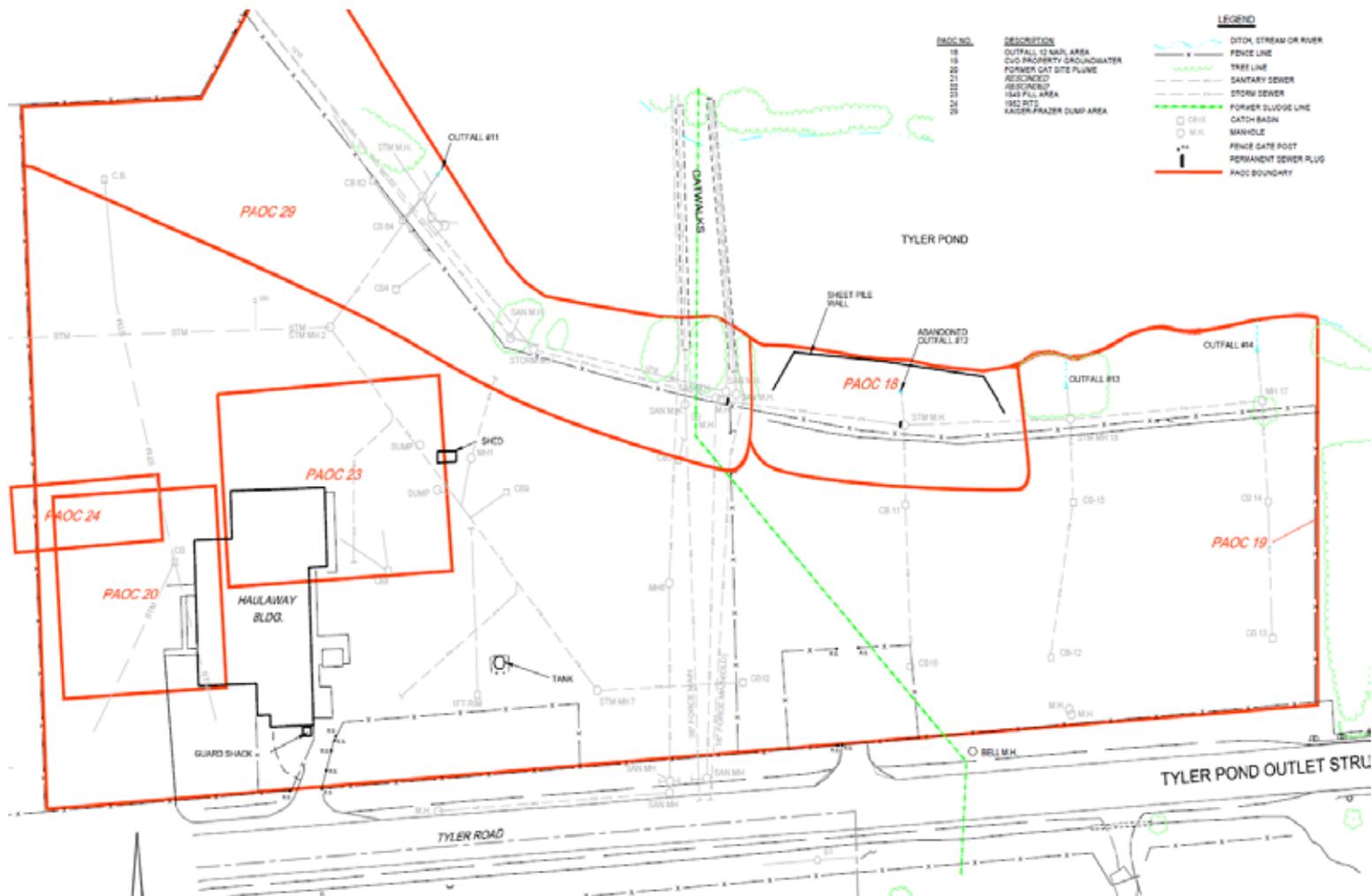
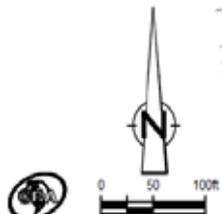


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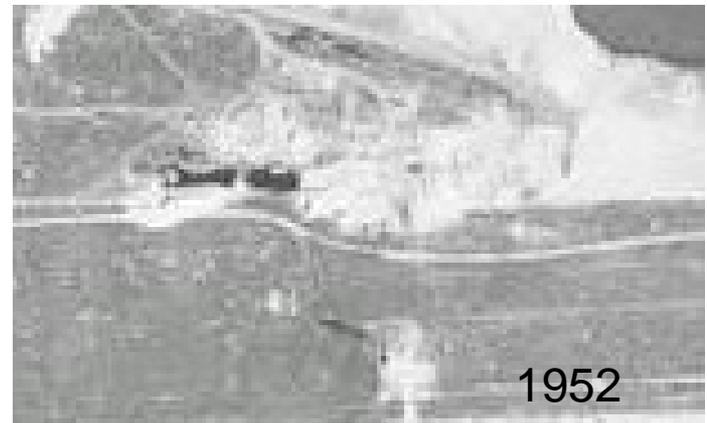


PAOC 23 - Impacts

- Historical photographs identify pits in the area
- Chlorinated VOCs primary COCs
- In area of Haulaway Building CVOCs range from 5 to 8 ppm in groundwater
- Soil gas and indoor air sampling confirmed Vapor Intrusion from subsurface into the building

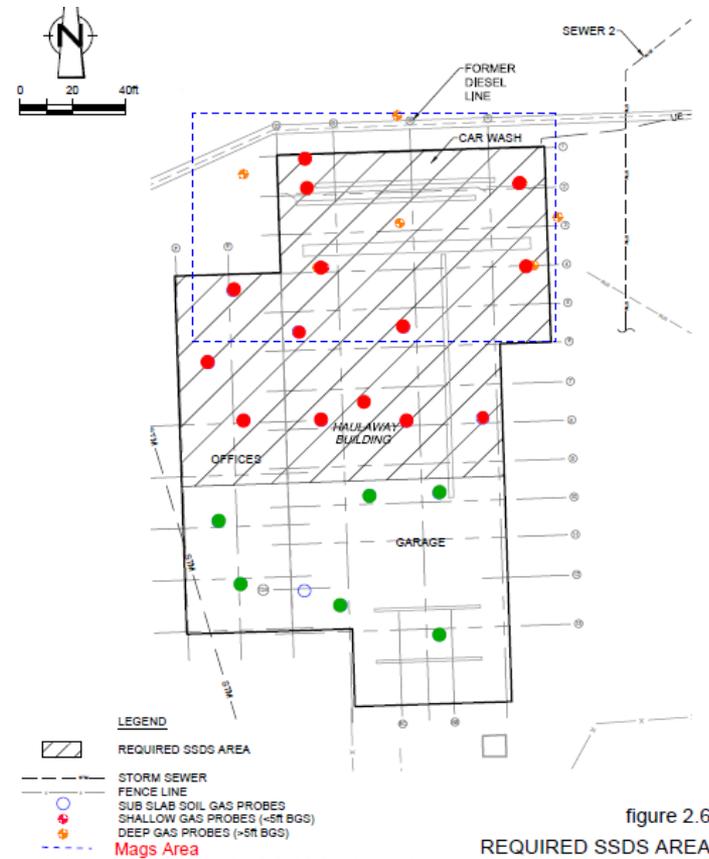


PAOC 23 - Impacts



PAOC 23 – Impacts

- Soil gas impacts identified under a portion of the building
- Lab result < sub slab screening criteria
- Lab result > sub slab screening criteria (TCE & cis-DCE)



PAOC 23 – Interim Measure

- Site under contract to new owner
- New owner planned to use building
- Objective – eliminate VI risk to building occupants
- New owner comfortable with Radon type system

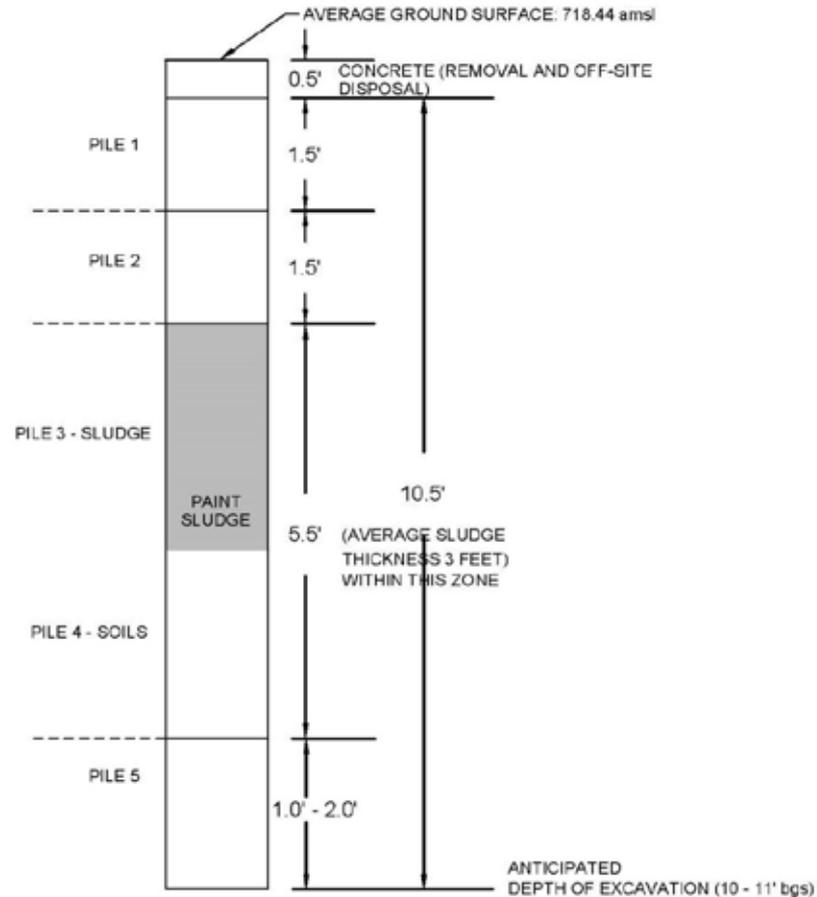


PAOC 23 – Interim Measure

- Initial calculations identified highly likely scenario that an active sub slab recovery system would require controls on the exhaust
- Racer and DEQ wanted lower cost and simpler operation of a long term O&M system



PAOC 23 – Interim Measure



TYPICAL EXCAVATION CROSS-SECTION



PAOC 23 – Interim Measure

- Removal of source material from under the building to
- Involved
 - Shoring of building
 - Removal of inside non-structural wall
 - Excavation/segregation – based on similar impacts observed within an interval
- Remnants of two drums recovered



PAOC 23 – Interim Measure



2013 – Foundation support measures to allow excavation of paint sludge from beneath the building



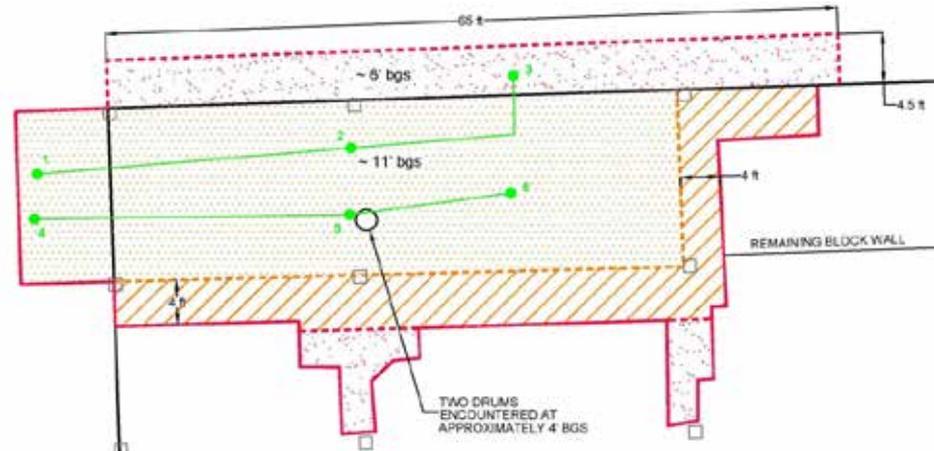
PAOC 23 – Interim Measure

- 2013 – excavation of paint sludge from beneath the building



PAOC 23 – Interim Measure

- Installed Infiltration gallery

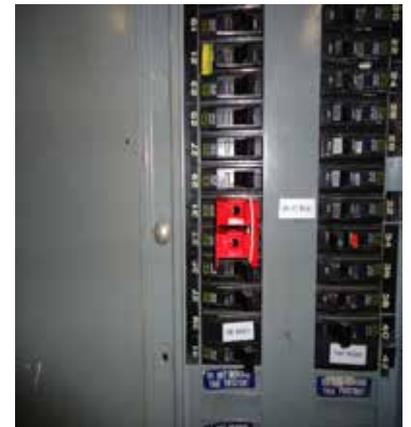


PAOC 23 – Interim Measure



PAOC 23 – Interim Measure

- Installed SSDS



PAOC 23 – Interim Measure

- Installed SSDS operating as intended (18 months)
 - Maintaining required vacuum
 - Exhaust sampling confirmed no air permit and/or controls needed
- Prepared O&M manual for new owner



Impacts

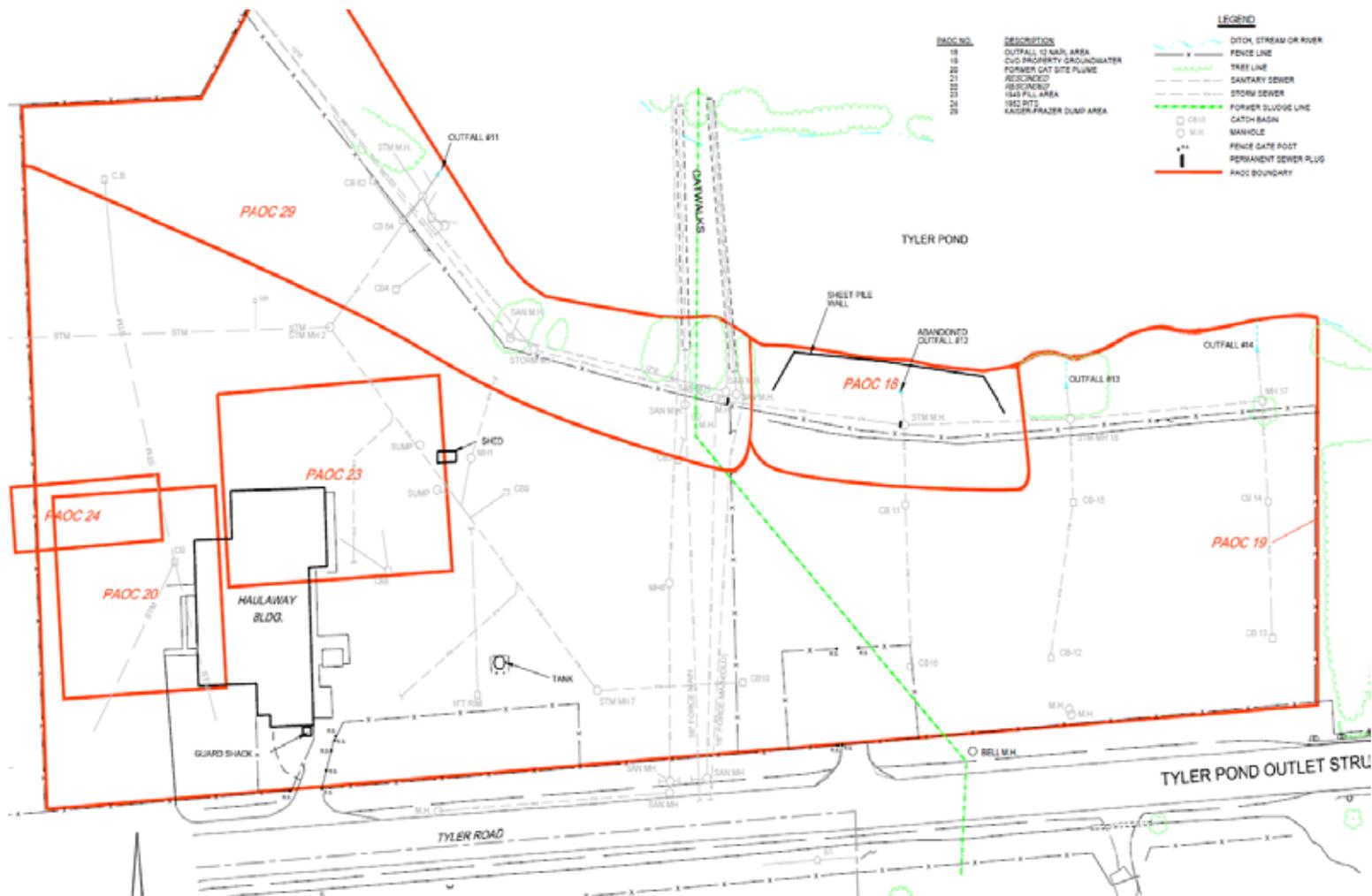
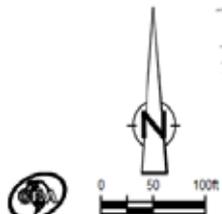


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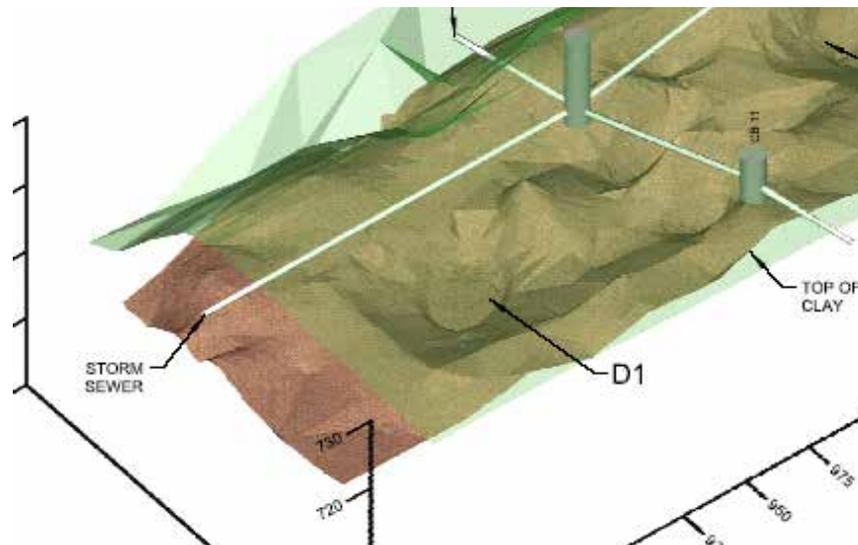
PAOC 18 - Impacts

- Chlorinated VOCs primary COCs
- DNAPL identified – TCE (~ 40%), PCBs (~1.5%)
- Immediately adjacent to pond (<10 feet)
- Acute GSI



Conceptual Site Model

- DNAPL first identified in 2004
- Investigation identified DNAPL in low spots in the clay



- Additional DNAPL recovery points installed
- ~1,750 gallons of DNAPL recovered over 8 years



Past Interim Measures

- Late 2004 - Sheet pile wall installed as barrier to DNAPL (not water) venting to pond
- 2010 - Collection, treatment and discharge to local POTW of groundwater from behind the wall
- Hydraulic containment costing +\$100,000/year



IM - Objective

- Remove DNAPL and impacted soil with potential to leach CVOCs such that GW concentrations venting to surface water are reduced
- DEQ and RACER wanted a cost effective long-term solution



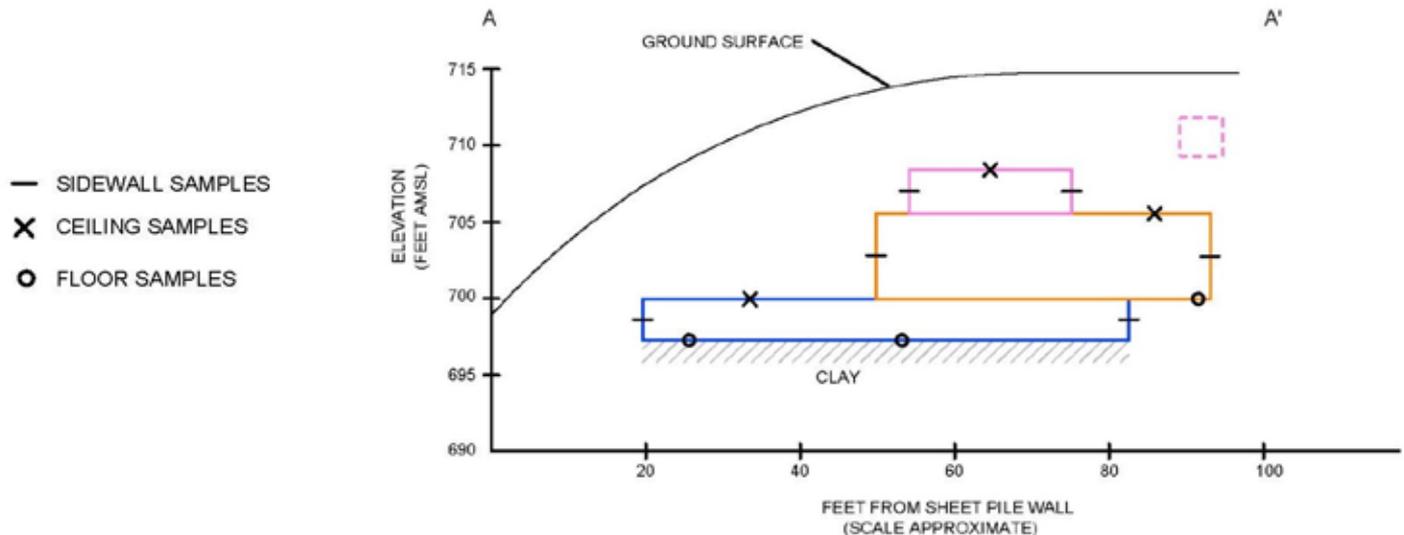
PAOC 18 IM - Approach

- Iterative sampling coupled with 3D modeling helped define the problem and explain a solution
 - Increasing Owner/Regulator acceptance of “mining like” removal
- Soil conditioning within excavation limits to reduce CVOOC concentrations
 - Using sodium persulfate and potassium permanganate
 - Reduced to non-haz prior to the point of waste generation

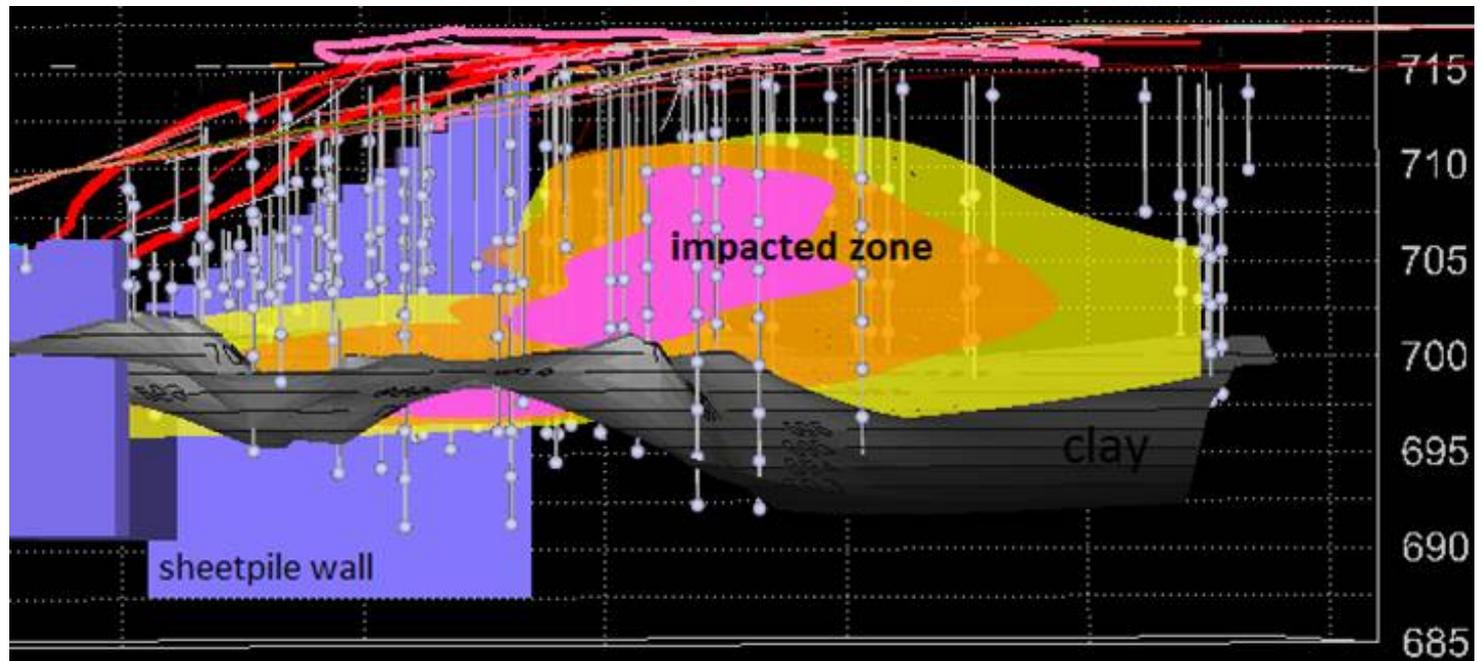


IM – Remediation Requirements

- Additional investigation to define remediation scope
- ↑ Environmental Understanding =
↓ Remediation Cost



IM – Remediation Requirements



IM – Remediation Requirements

- Problem were trying to solve:
GW venting above Acute GSI Values
- So how do we solve that:
 - Remove source. What is the source?
 - DNAPL
 - Soil
 - How do we define “source” for soil?????
 - » Visual impacts, concentration based???
- Calculated a mixing zone based site specific GSI soil protection criteria



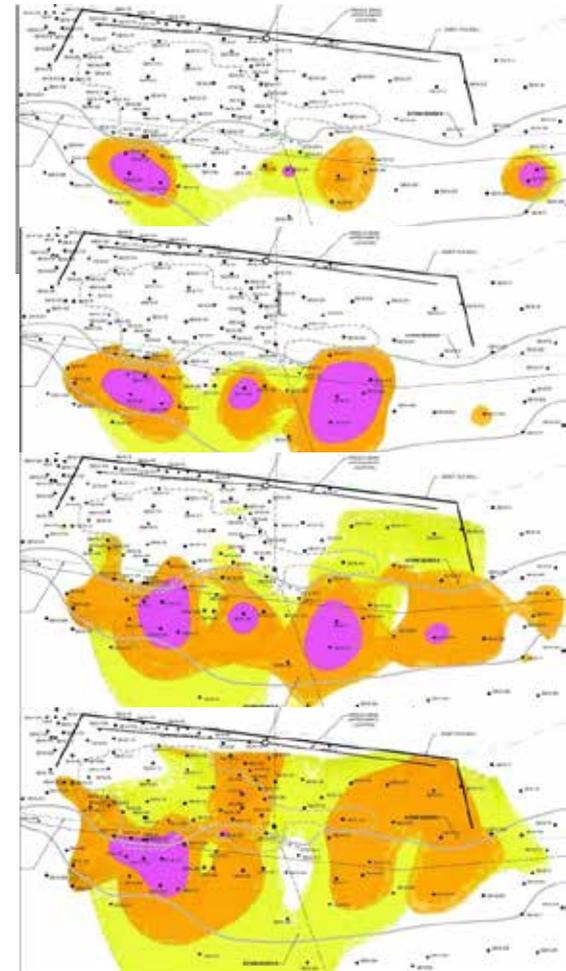
IM – Remediation Requirements

1. Calculated Mixing Zone Based GSI Values
 - Water values based on our site specific conditions
2. Calculated GSI Protection Criteria
 - Corresponding Soil criteria using:
 - Value calculated in No. 1
 - Soil Water Partitioning Value
 - March 2005 MDEQ RRD Op Memo No. 1 – Technical Support Doc. Att. 9



IM – Remediation Requirements

- Colors indicate concentrations exceeding
 - Remediation Requirements
 - 20 x RCRA
 - Alt. Soil Treatment Std.
- 1 foot vertical interval slices through model



IM – Implementation

- Extent of excavation based on in-situ soil concentrations and 3D model
- Maximum lateral extent of excavation approved before excavation began
- Overburden that met clean up criteria re-used as backfill (excavated, staged, sampled)



IM- Implementation

- Soil Conditioning Mixing
 - completed in 20 ft x 20 ft x 10 ft cells within excavation
 - “Proving samples” collected from each cell to evaluate conditioning for landfill disposal
 - 2 per cell (1 top 5ft, 1 bottom 5 ft)
 - designed to verify consistency in soil concentrations within a cell



IM- Implementation

- Soil Conditioning Mixing
 - On-site VOC laboratory – key for quick turn around time on progress and proving samples
 - Conditioned soils were disposed off-site to avoid concerns of chem ox reagents remaining onsite adjacent to pond
 - Groundwater collected within the excavation, treated and discharged to POTW



IM- Implementation

- Other
 - Imported Clay – 2 ft of clay was imported and placed on native clay at bottom of excavation to inhibit back diffusion if impacts remained
 - Infiltration Gallery – a network of horizontal wells was installed throughout the excavation to provide future access for water removal, nutrient or amendment addition



IM- Implementation



IM- Implementation



IM- Implementation



IM- Implementation



IM- Implementation



IM- Implementation



IM- Implementation



IM- Implementation

- ~20,000 CYD of soils managed
 - ~10,000 CYD of CVOC impacted soils conditioned and disposed of as non-hazardous soils
 - ~1,400 CYD of TSCA/CVOC impacted soils conditioned and disposed of as TSCA/RCRA haz soils
 - ~8,600 CYD of reusable overburden removed, tested and re-used as fill



IM- Implementation

- ~230,000 gallons of water treated and discharged to local utility under permit
- Completed for ~\$2.4M (Contractor and Oversight)
- Substantially completed between September 2013 and January 2014, restoration June 2014



Post IM Sampling

- Post implementation sampling has involved sampling sump in re-installed french drain/sump and select infiltration gallery locations
- 2015 groundwater concentrations are well below acute GSI values
 - Infiltration galleries
 - Only exceed DW with the exception of 1 up gradient location
 - French Drain/Sump
 - No exceedances of generic VOC criteria



Collaboration

Extraordinary cooperation between RACER and DEQ/EPA.

- Annual budget approval process.
- Work scope approval process.
- Resulting co-managed budgets.
- Streamlined Part 201/Part 111/RCRA documentation.
- E-mail work plan and budget amendment approval process.
- Comfort letter issued timely (Jose Cisneros - Region V).
- Developing model PPA (RCRA, CERCLA, TSCA).
- Agency(s) willingness and availability to engage with users.
- TAPs Team and RAT Team (program consistency) and
- Cooperation between DEQ and EPA



Collaboration

- Feedback/Discussions during Mixing Zone determination calculations
- Participation in weekly onsite meetings during implementation
 - Timely information sharing
 - Timely approvals for decisions needed during implementation
- Coordinated Approval with EPA for TSCA portion of work



Collaboration

- Feedback/Discussions on waste characterization, staging and disposal
 - Point of generation and Area of Contamination
- Joint participation in public meetings prior to work being initiated
 - Identify to the community what to expect
- Communications with the new owner
- PPA for the property



Redevelopment



- RACER continues to complete corrective action after property sale
- ITI received a Prospective Purchase Agreement from EPA



Questions or Comments?

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