

## **A Case Study**

# **Implications of the 2010 and 2012 Part 201 Amendments on the Characterization, Remediation and Unrestricted Closure of Sediments and Near Shore Soil at the DTE Gas Broadway (Ann Arbor) former Manufactured Gas Plant Site**

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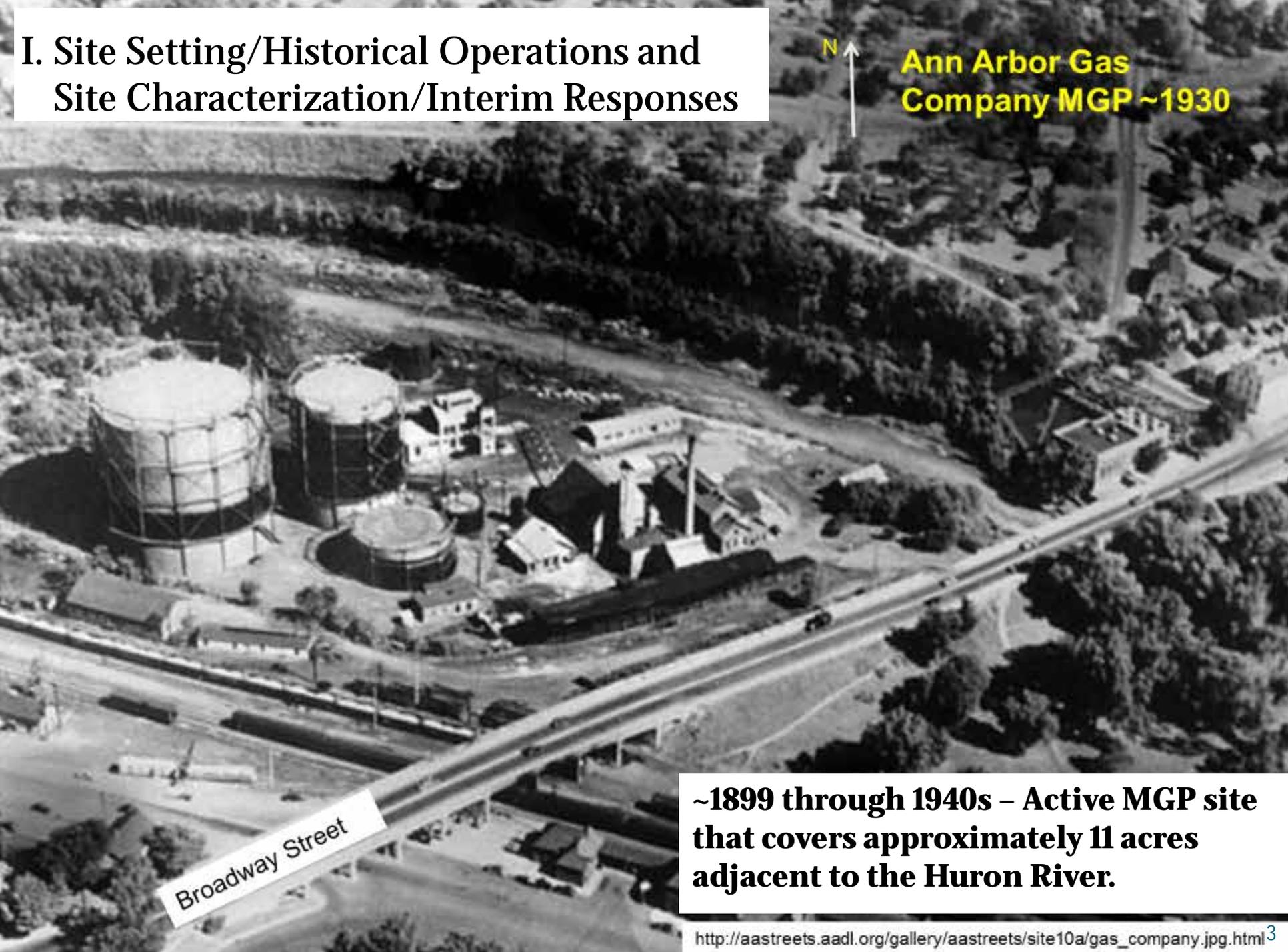
# **Overview and Agenda**

- I. Site Setting/Historical Operations and Site Characterization/Interim Responses**
- II. Remediation Objectives**
- III. Overview of the 2010 Part 201 Statutory Amendments**
- IV. Implementation Successes and Challenges**
- V. Overview of the 2012 Part 201 Statutory Amendments**
- VI. Results and Lessons Learned**

# I. Site Setting/Historical Operations and Site Characterization/Interim Responses



**Ann Arbor Gas Company MGP ~1930**



Broadway Street

**~1899 through 1940s – Active MGP site that covers approximately 11 acres adjacent to the Huron River.**

Former DTE Gas Broadway Service Center ~2009 just prior to deconstruction



## II. Remediation Objectives

What changed that allowed/drove site remediation work to go forward?

- Closure and subsequent demolition of the former gas service center buildings in 2009/early 2010 opened up access for investigation and remediation;
- DEQ expressed concerns about sediment due to the close proximity of the former MGP to the Huron River and the existence of historical and existing discharges;
- Planned 2012 A2 Whitewater Park (including portions within the Huron River) north of the site made sediment evaluation and as needed, remediation a priority and sediment evaluation and sampling was completed in 2011; and
- DTE Energy committed to A2 to build the planned portion of the whitewater park in the Huron River after sediment remediation completed (if it could be permitted).



# Upland Soil and Groundwater Characterization – GeoProbe® Investigation



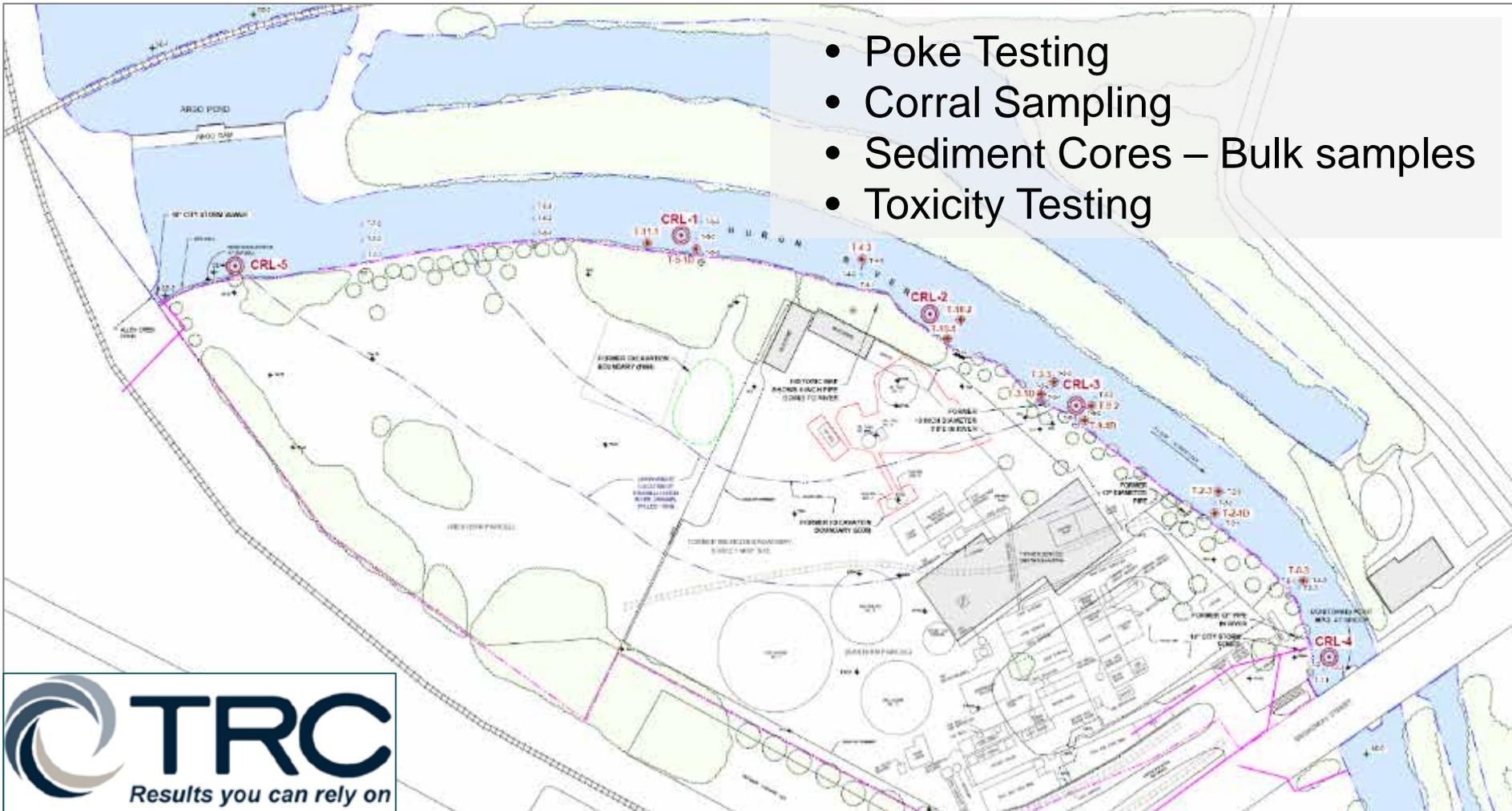
High permeability gravel layer





# 2011 Sediment Investigation

- Poke Testing
- Corral Sampling
- Sediment Cores – Bulk samples
- Toxicity Testing



# Poke Testing



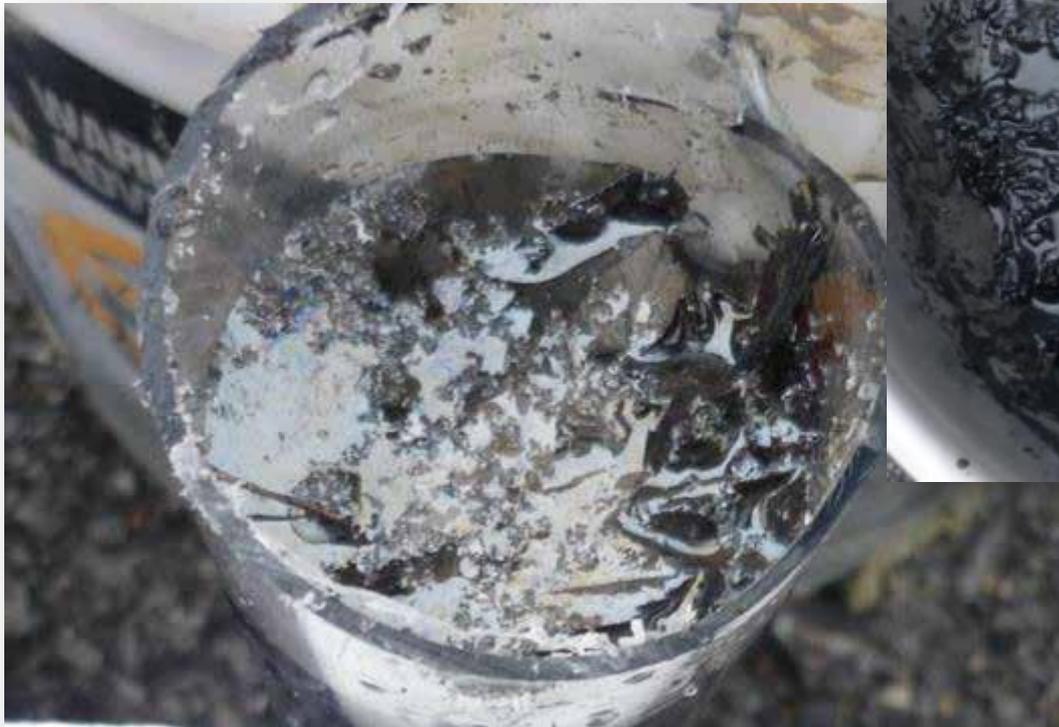
# Sheen Corral Sampling



# Sediment Core Collection Using Vibracore



# Sheen Producing Sediment from Cores





# Conceptual Site Model – Potential Modes of NAPL Transport to Huron River

- Ebullition-facilitated NAPL migration (sheen) from sediment
- NAPL seepage (sheen) from the river bank
- Erosion of hardened asphaltic tar and transport as solid particles
- Erosion of tarry/oily sediment from river bank

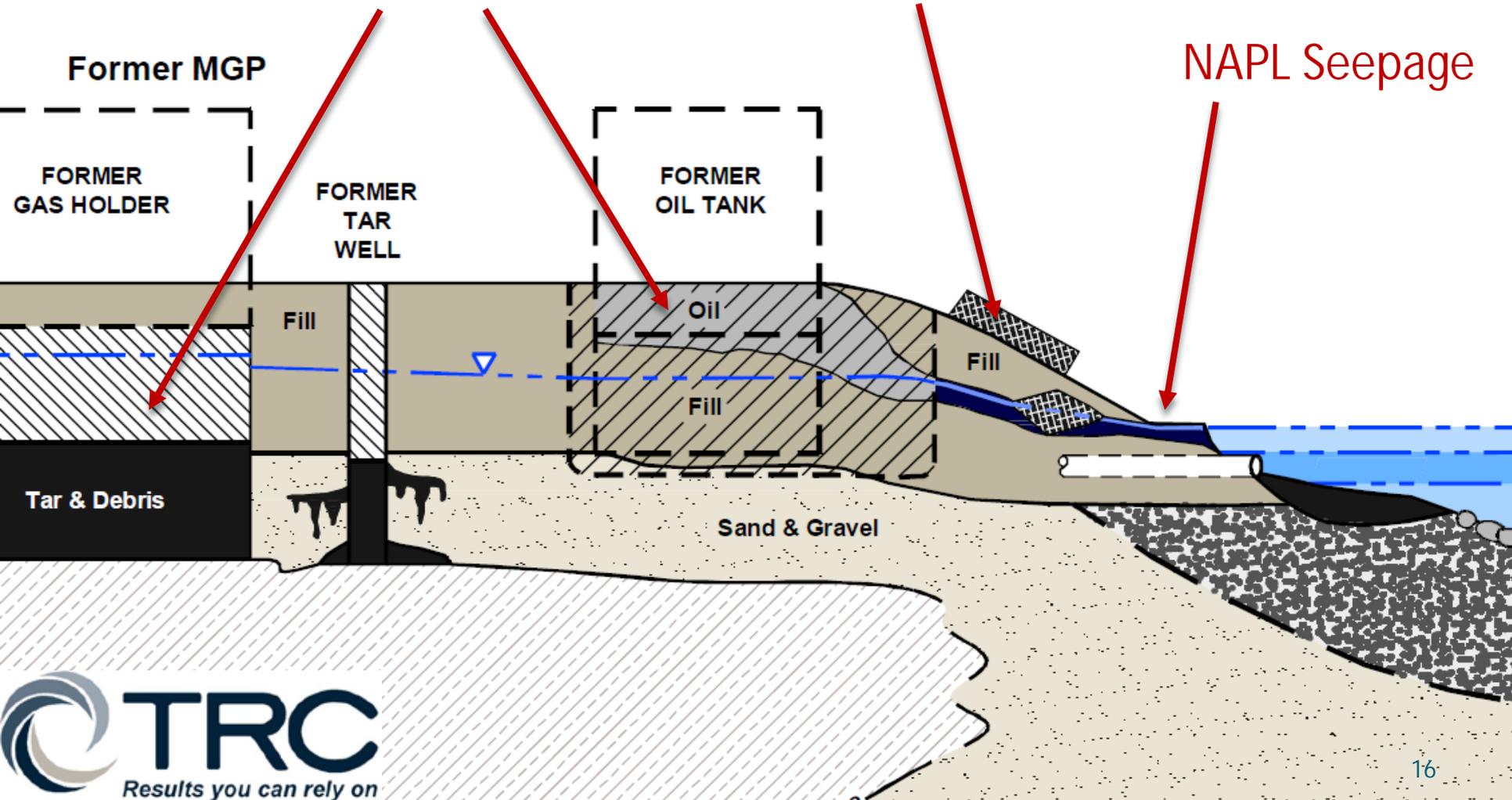


# Conceptual Site Model for NAPL Transport

Upland NAPL Sources

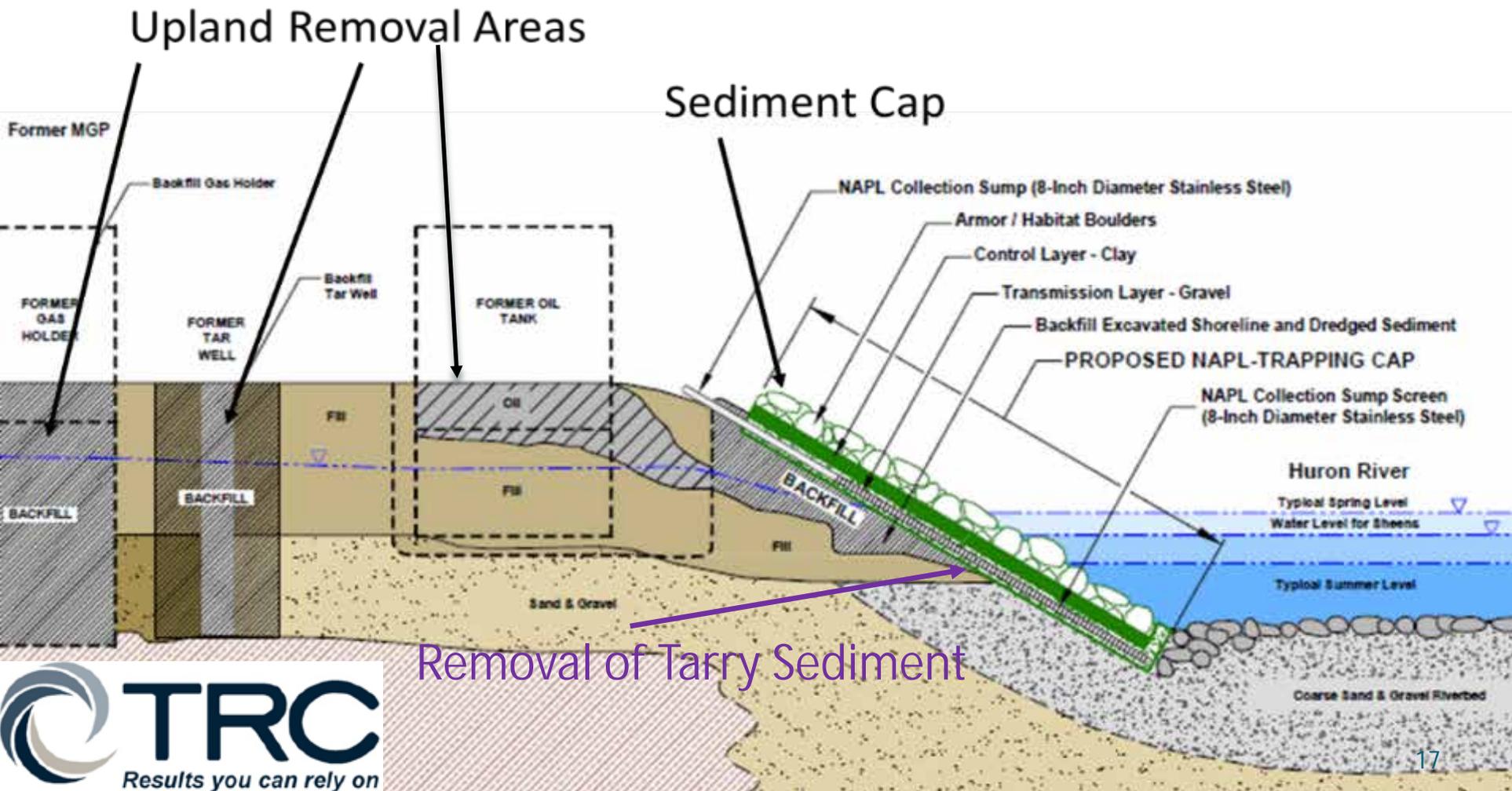
Hardened Tar and Oily Soil

NAPL Seepage



# Conceptual Remedy

Sediment Cap Integrated with Upland Source Area, Nearshore Soil and Selected Sediment Removal From the Huron River.



## **The Amazing Race (December 2011 through Mid-2012):**

- Completed pre-engineering remediation studies;
- Completed the remediation design;
- Secured the needed local, state and federal permits for the planned remediation work in the Huron River and associated floodplain;
- Completed a Response Activities Plan (ResAP) for the planned source area, near shore soil and sediment remediation (that included the complete remediation design) that was submitted working copy to the MDEQ in February 2012 and was finalized and submitted to the MDEQ in March 2012;
- Secured final MDEQ approval of the ResAP in early June 2012;
- Completed bidding in June/July 2012; and
- Were in the field to implement the MDEQ approved ResAP to address upland source areas, nearshore soil and affected Huron River sediments with the selected remediation contractor starting in August 2012.

### **III. Overview of Select 2010 Part 201 Statutory Amendments**

- Response Activity Plans
  - Less comprehensive than Remedial Action Plans
  - Interim Response or Remedial Action
- No Further Action Reports
  - Remedial Action
  - For entire facility
  - Postclosure Plan, if necessary
  - Postclosure agreement, if necessary
  - No “conditional” approval

## Implications on site characterization and remedy design:

- Use of Response Activity Plan (ResAP) as a mechanism to obtain agency/responsible party agreement on clean-up standards/remedy scope for portions of the facility:
  - Impacted near shore soil;
  - MGP impacted sediment between the Argo Dam and Broadway Bridge; and
  - MGP upland source removal
- Use of ResAP to develop framework for pre-verification sediment sampling approach; and
- Use of a modified NAPL Trapping Cap along the Huron River front where the former MGP operated.

## **IV. Broadway Site Remedy Implementation Challenges**

- Highly visible project adjacent to a major recreation area/Border to Boarder trail in the City of Ann Arbor;
- Fugitive emission (e.g. dust, odors, *etc.*) potential;
- Surface water control (Huron River and Argo Dam);
- Turbidity control; and
- Scope and schedule creep (additional affected material identified and remediated, trucking availability, *etc.*).

# Remediation Challenges



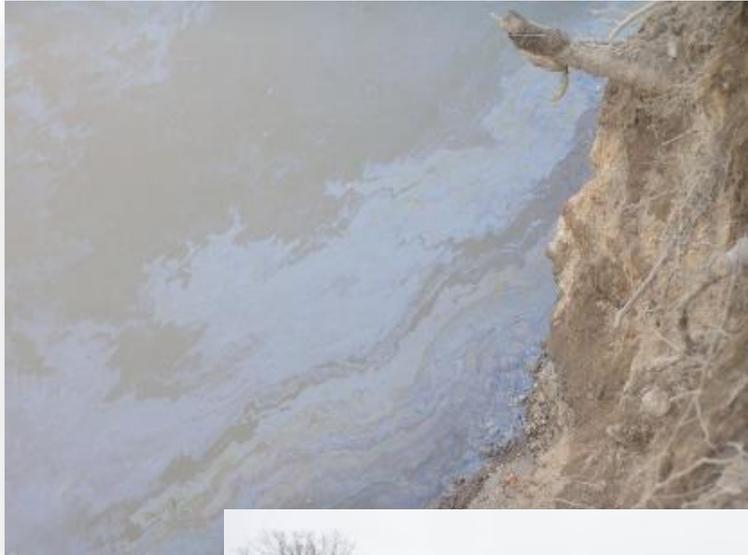
# Remediation Challenges



# Removal of Impacted Upland Source Area Material/ Structures



# Removal of Impacted Sediment and Bank Soil



# Placement of NAPL Transmission and Collection Layer



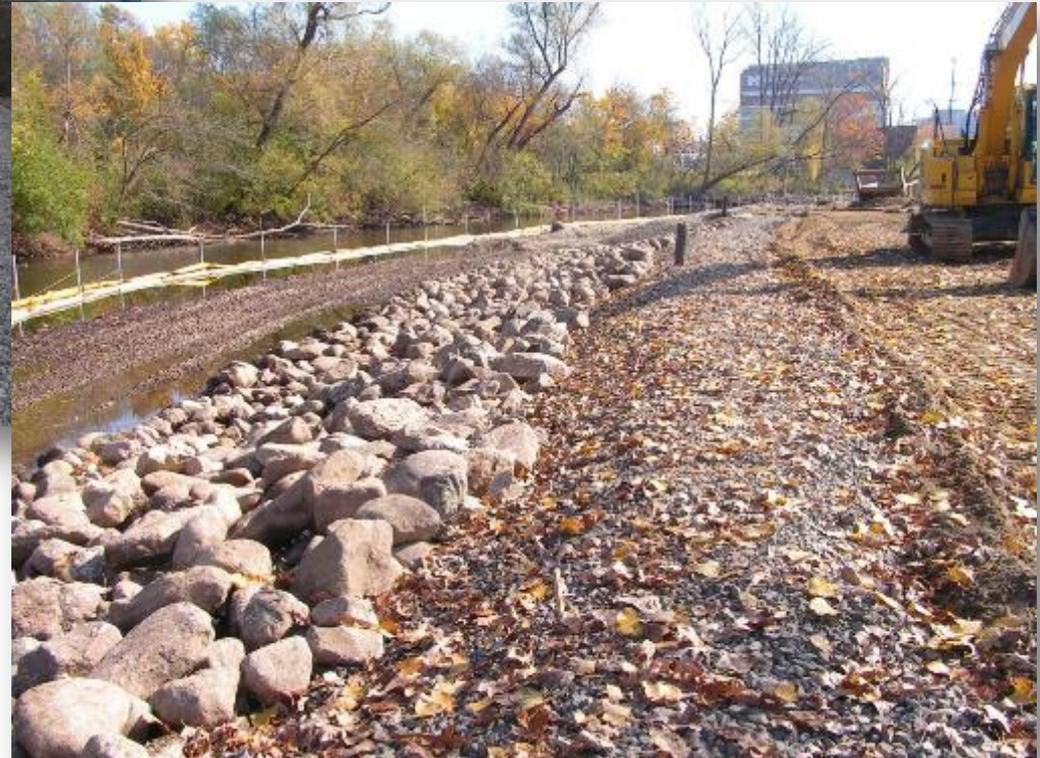
# Installation of GSI/NAPL Monitoring Points



# Grading AquaBlok® Containment Layer



# Armor Layer – 18” Field Stone



# Huron River after Site Restoration (2014)



# **V. Overview of Select 2012 Part 201 Statutory Amendments**

- NFA now available for Portion of Facility
  - 1 or more hazardous substances
  - 1 or more media
  - 1 or more geographic portions
  - 1 or more pathways

## **Implications for facility closure:**

- Use of 2012 Part 201 statutory amendments to grant closure (approved No Further Action request) for sediment and unsaturated soil at different **portions** of the facility;
- Need to adequately define the portion(s) of the facility that satisfy the cleanup category requirements for unrestricted residential use and ensure the long-term effectiveness of the remedy;
- Assessment of post-closure requirements – redefine NAPL trapping cap as a contingency system; and
- Managing expectations

# VI. Results and Lessons Learned

## Agency Perspective:

- Communicate early, often, directly, and professionally (both internally and with outside stakeholders);
- Understand what outcome the stakeholder is seeking; and
- Work with the applicant & internal stakeholders (e.g. WRD permitting and resource sides, City of Ann Arbor, Huron River Watershed Council, County Health Department, *etc.*) early on in the process and throughout the process.

## Utility Perspective:

- Utilize a streamlined approach to agency negotiations through collaboration; and
- Define your remedy with the end-game in mind.

# Questions?





**DTE Energy®**



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