

Public Informational Meeting on the Former Sparrows Point Steel Mill Environmental Cleanup

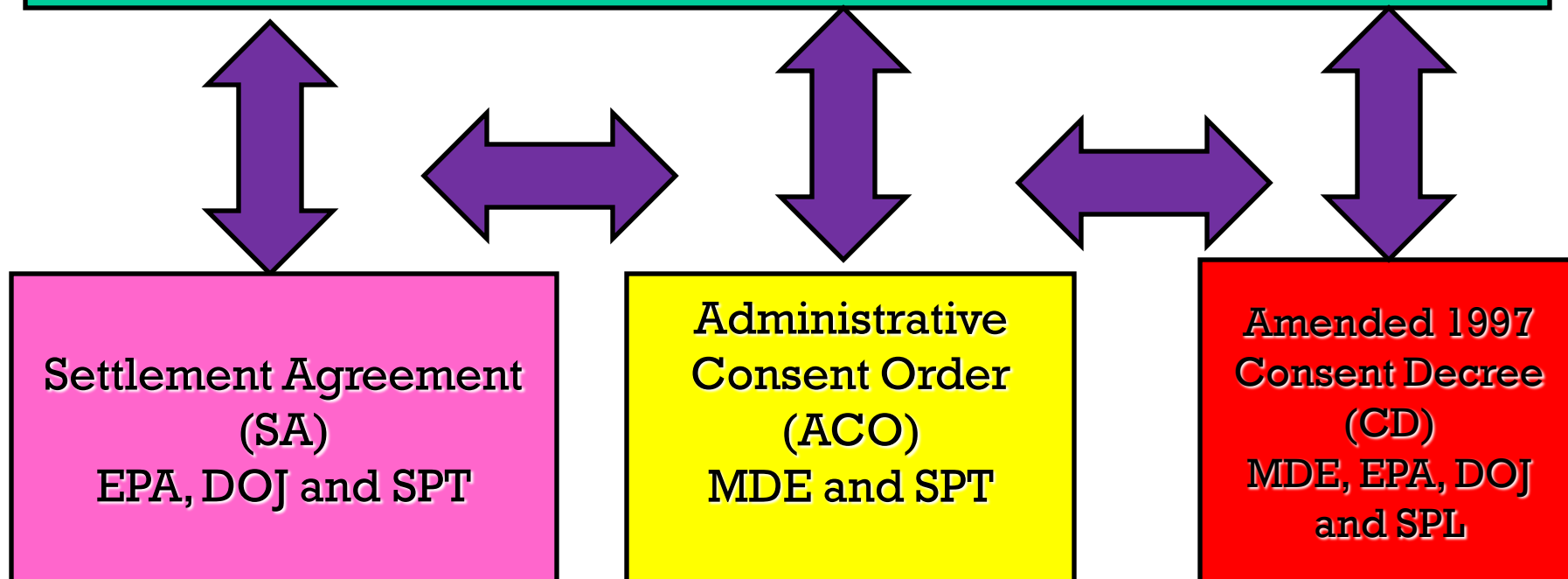


September 28, 2016

Environmental Work On the Entire Site For MDE and EPA

MDE will assume primary responsibility for overseeing implementation of the onshore work in consultation and cooperation with EPA

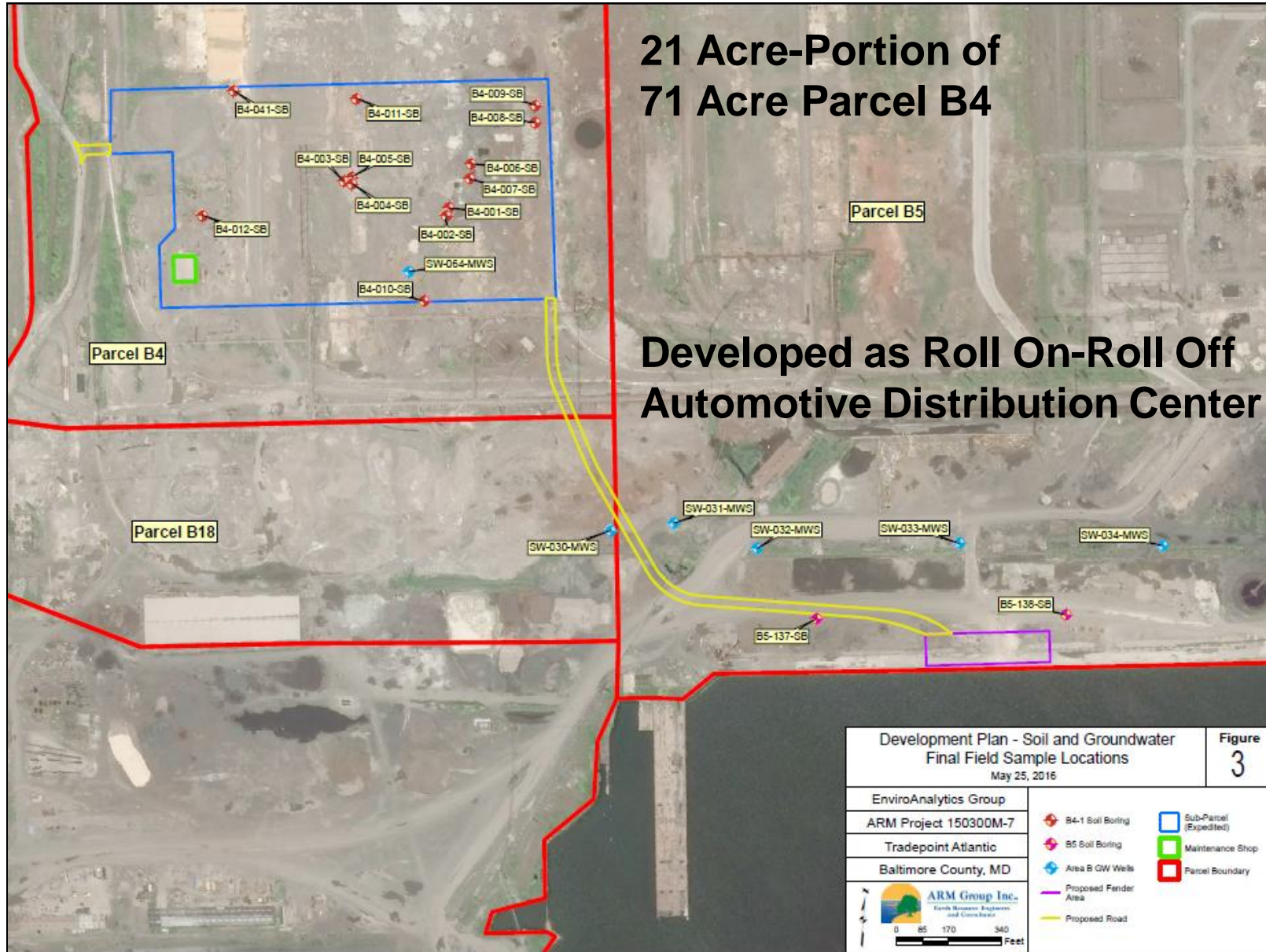
EPA will assume primary responsibility for implementation of the offshore work in consultation and cooperation with MDE



Site Investigation Status



Development Work Plans-Sub Parcel B4-1



Developed under Controlled Hazardous Substance (CHS) Act
(Section 7-222) of the Environment Article

Parcel B4-1

Approved work plan included 15 soil borings and 29 soil samples
Three soil gas samples from existing 5700 sq. foot building remaining on site
Groundwater Information from Area B Site Wide Groundwater Work Plan

Fender Area

Phase II Investigation-B5

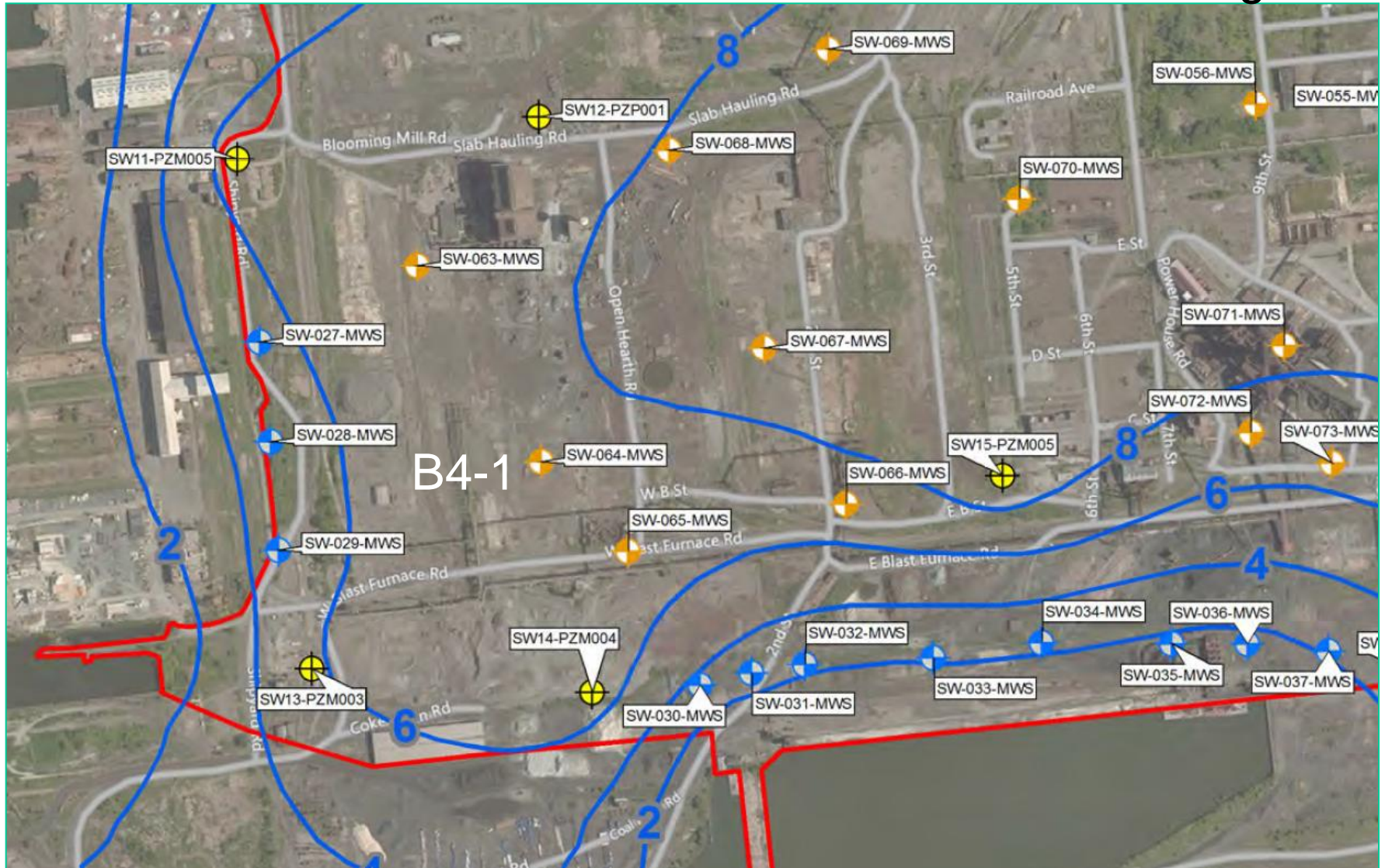
Two Soil Borings in vicinity
and Six Soil Samples

Groundwater wells from Area B
Site Wide Groundwater Work Plan



Development Work Plan-Sub Parcel B4-1

Parcel B4-1 Included within Area B Groundwater Investigation





Phase II Results:

Soil Samples Screened
Against Project Action Limits
based on EPA's Industrial Soil
Regional Screening Level (RSLs)
To identify the Contaminants Of
Potential Concern (COPCs)

Soil COPCs Identified Included:

Arsenic, Manganese, Hexavalent
Chromium and Lead, Semi-volatile
Organic Compounds, (SVOCs) and
PCBs.

Groundwater COPCs Identified Included:

SVOCs and Diesel Range Organics
(DRO)

Soil Gas:

Volatiles did not
exceed
Tier 1 Levels



Development Work Plan-Sub Parcel B4-1

The Proposed Development Plan is also a Remedial Remedy:

Paving of entire 21 acre parcel, construction of 2,000 linear feet of 30-foot wide access road and construction of a 36,640 square foot paved area incorporating a foot stern ramp (Fender Area).

Development Work Plan Addressed:

- Installation of Sediment and Erosion Controls
- Monitoring well abandonment
- Grading and site preparation
- Light standard Pier Installation
- Installation of electrical conduit, stormwater piping and structures
- Placement of Subbase
- Asphalt Paving
- Security and Lighting
- Stormwater Management
- Dust control
- Soil Management
- Dewatering
- Health and Safety
- Long Term Maintenance



SGS-52 Emergency Relading Pit & Track Scale

Development Work Plan-Sub Parcel B4-1



Construction Completed

Development Work Plan Parcel B22 Phase 1

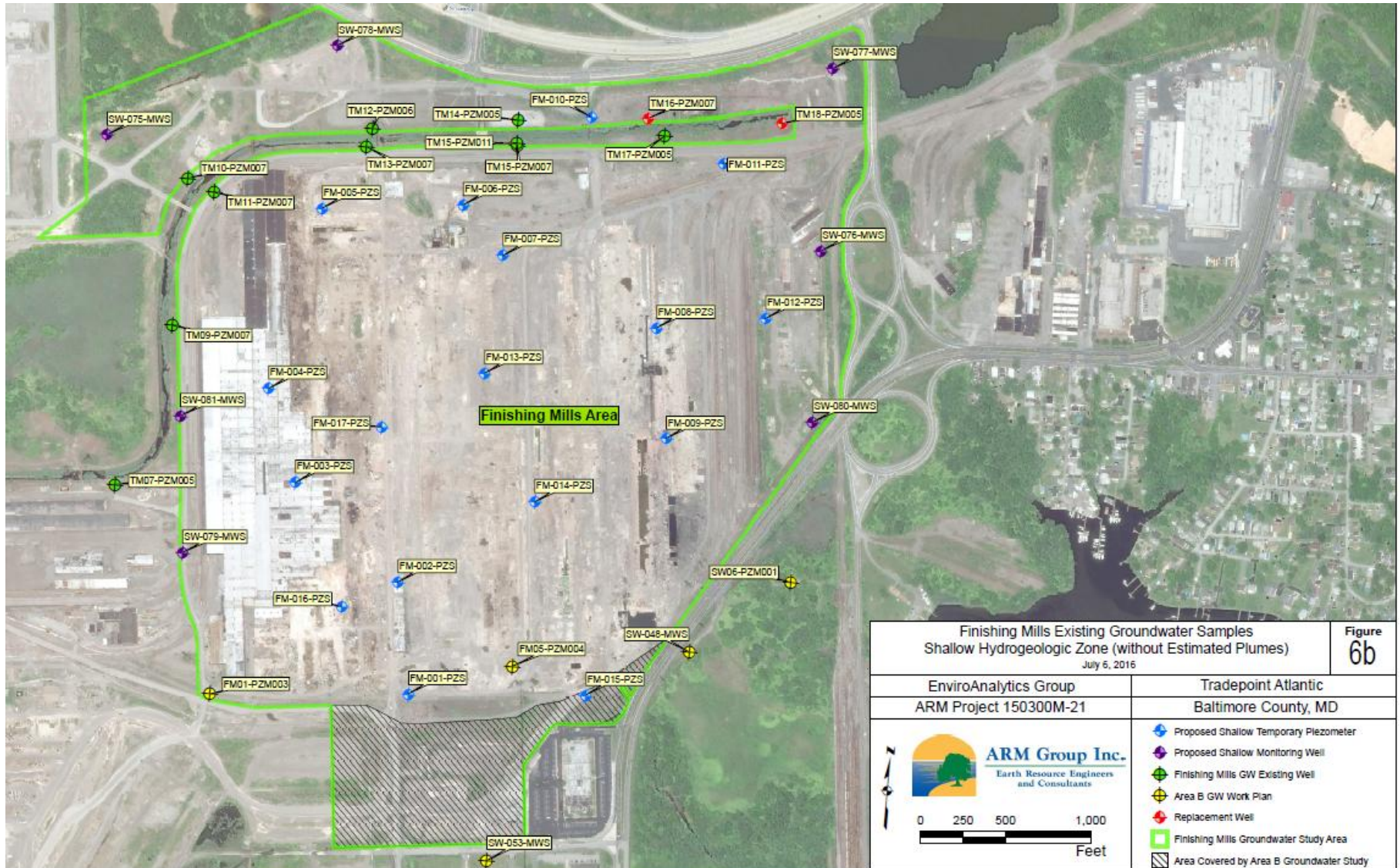
Parcel B22

Former Location of
Finishing Mills, Tin Mill
and Hot Strip Mill

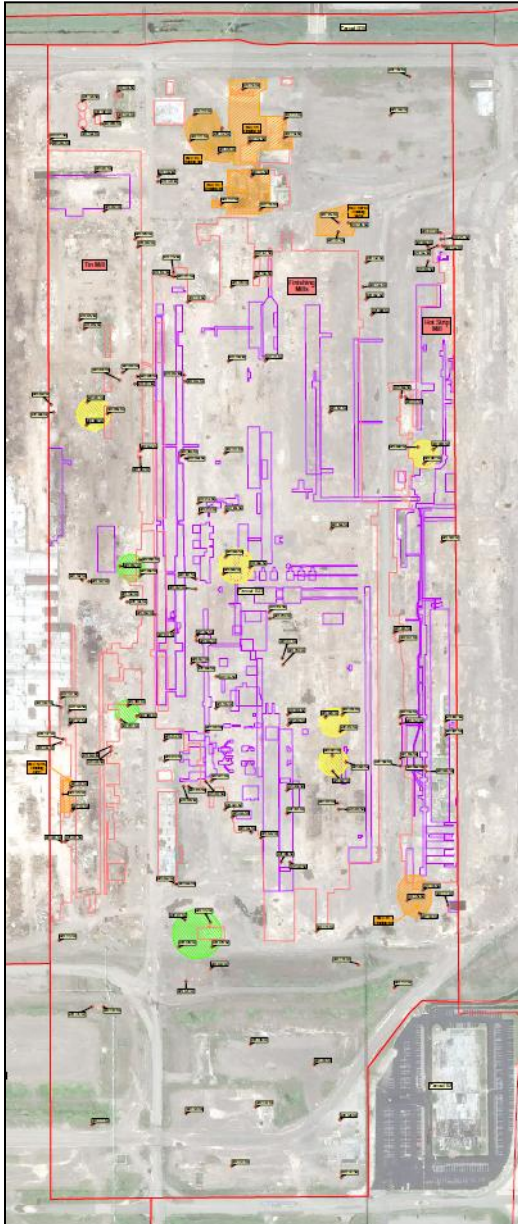


Development Work Plan Parcel B22 Phase 1

Parcel B22 Included within Finishing Mills Groundwater Investigation



Development Work Plan Parcel B22 Phase 1

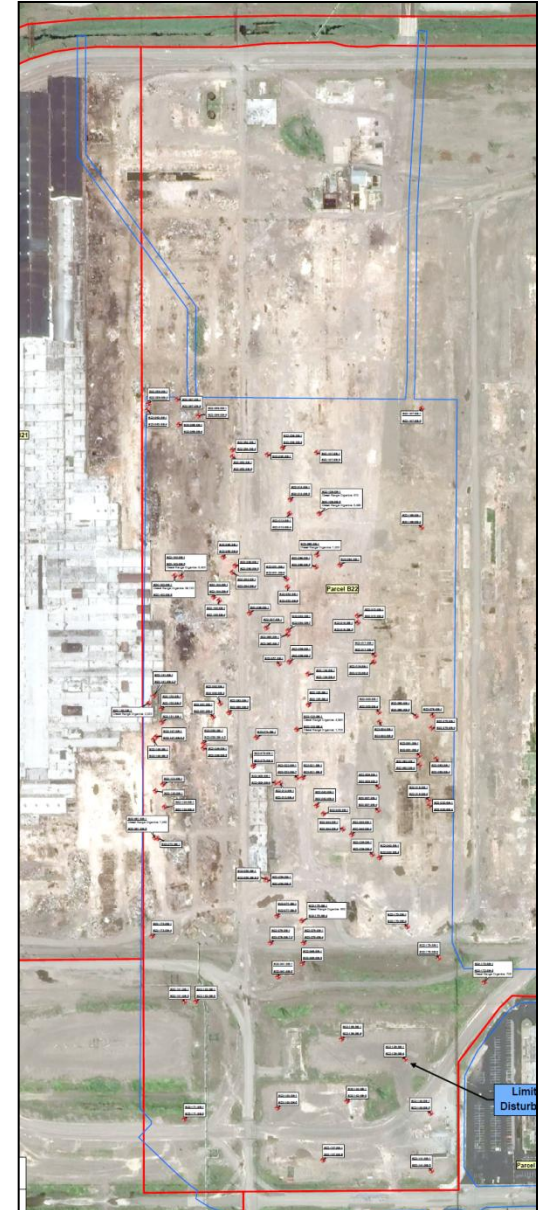


Phase II Investigation
B22 Parcel
179 Borings
386 Soil Samples

B22 Phase 1
102 Borings
211 Samples

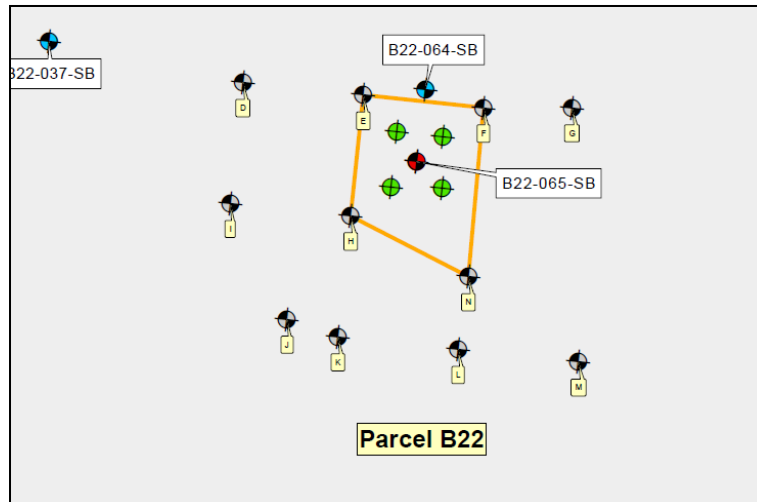
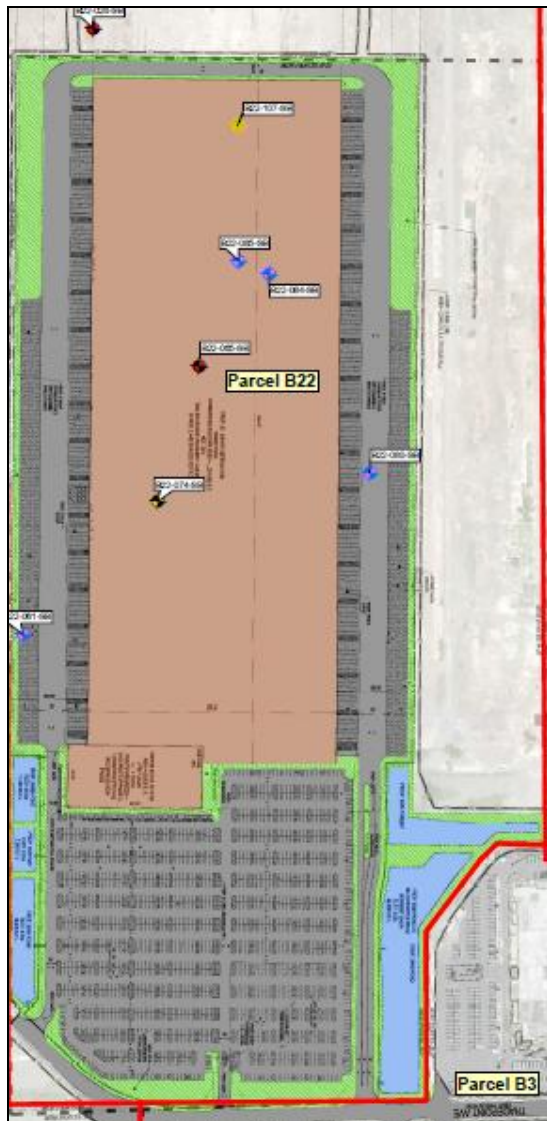
Additional delineation
samples collected for PCBs,
PAHs, Lead and Arsenic
after Phase II at B22 Phase 1

Phase I Soil COPCs
Metals: Arsenic, Manganese,
Lead, Thallium, Vanadium and
Hexavalent Chromium
SVOCs, TPH-DRO and PCBs



Development Work Plan Parcel B22 Phase 1

Development Plan Similar to B4-1 However B22 required excavation of soils for PCBs and TPH-DRO



Define Area
With PCBs in
soil > 50 ppm



Development Work Plan Parcel A3 Rod and Wire Mill



July 8, 2016 Plan under review by the Agencies

Interim Measures Parcel A3 Rod and Wire Mill

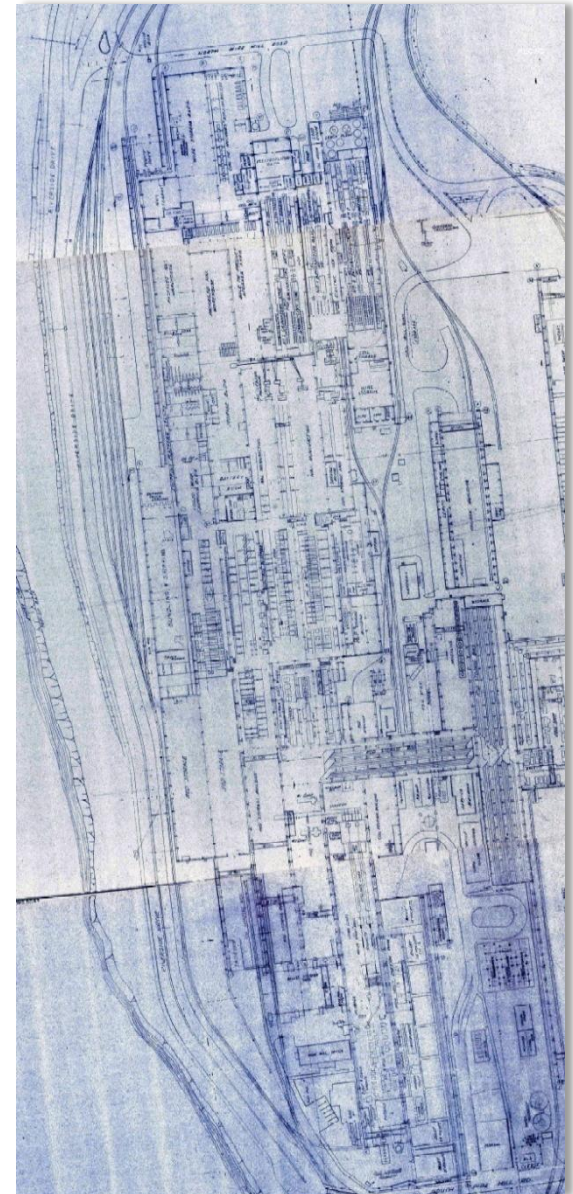
The former mill produced rod and wire products from 1940's to early 1980's

Approximately 60 acres of the former mill have been demolished.

Manufacturing process included leaching of zinc ore and treatment to remove cadmium impurities.

Storage of leach residue, dewatered sludge and excess filtrate resulted in soil and ground water contamination with zinc and cadmium.

Interim measures
pump and treat system
In operation since 1987

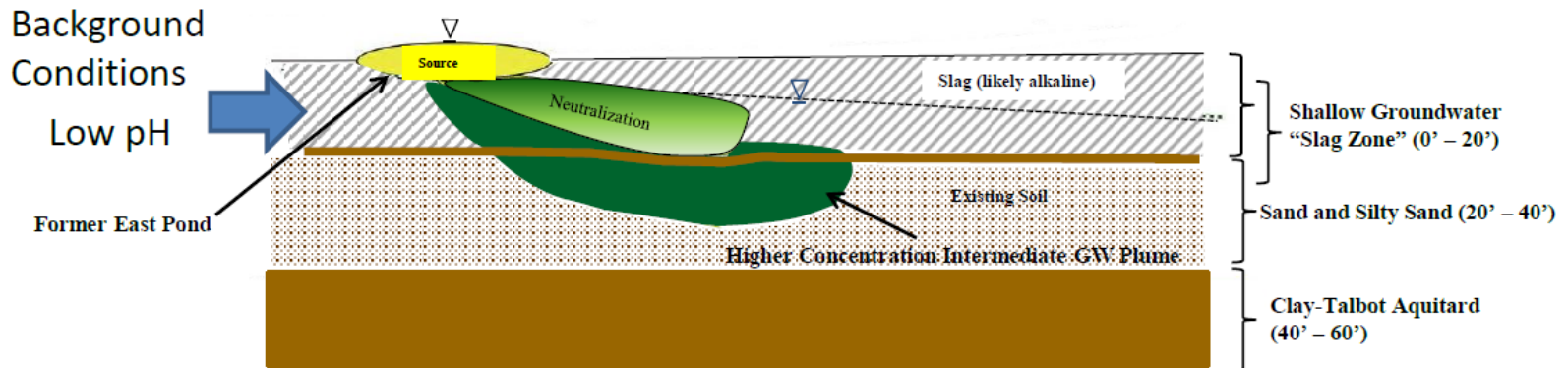


Interim Measures Parcel A3 Rod and Wire Mill

Based on the results of additional work completed in 2016 in the vicinity of the Former Northwest Pond, Former East Pond and Former Sludge Bin Storage Area including several test pit excavations, soil sample analysis, groundwater sample analysis, a soil-reagent treatability study, a groundwater pH adjustment titration study and groundwater modeling a new approach to groundwater treatment was proposed to the Agencies.



Simplified Conceptual Model Neutralization and Attenuation of Metals by Mineral Precipitation



- ❖ Recent Investigation has modified original Conceptual Site Model.





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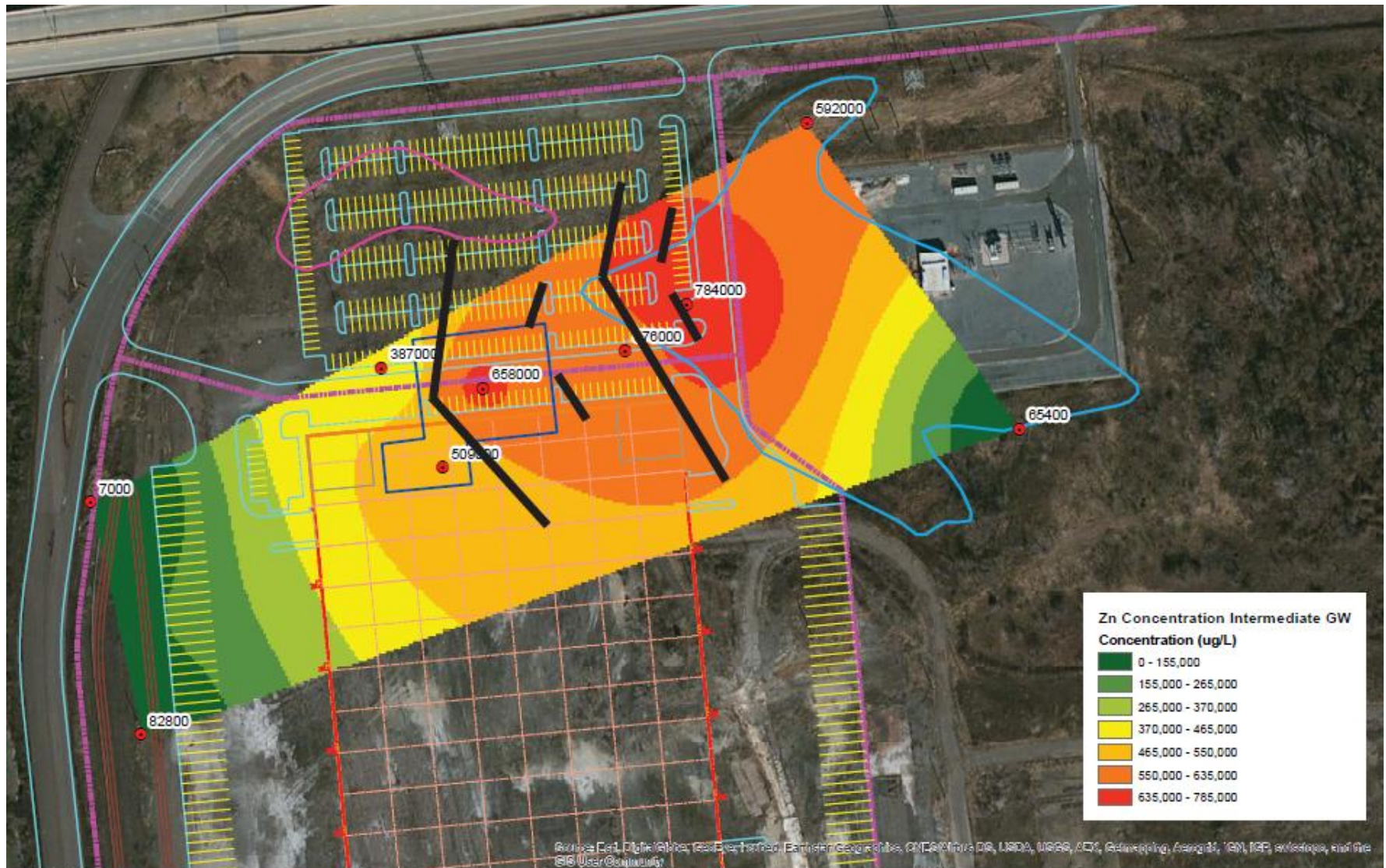
Interim Measures Parcel A3 Rod and Wire Mill



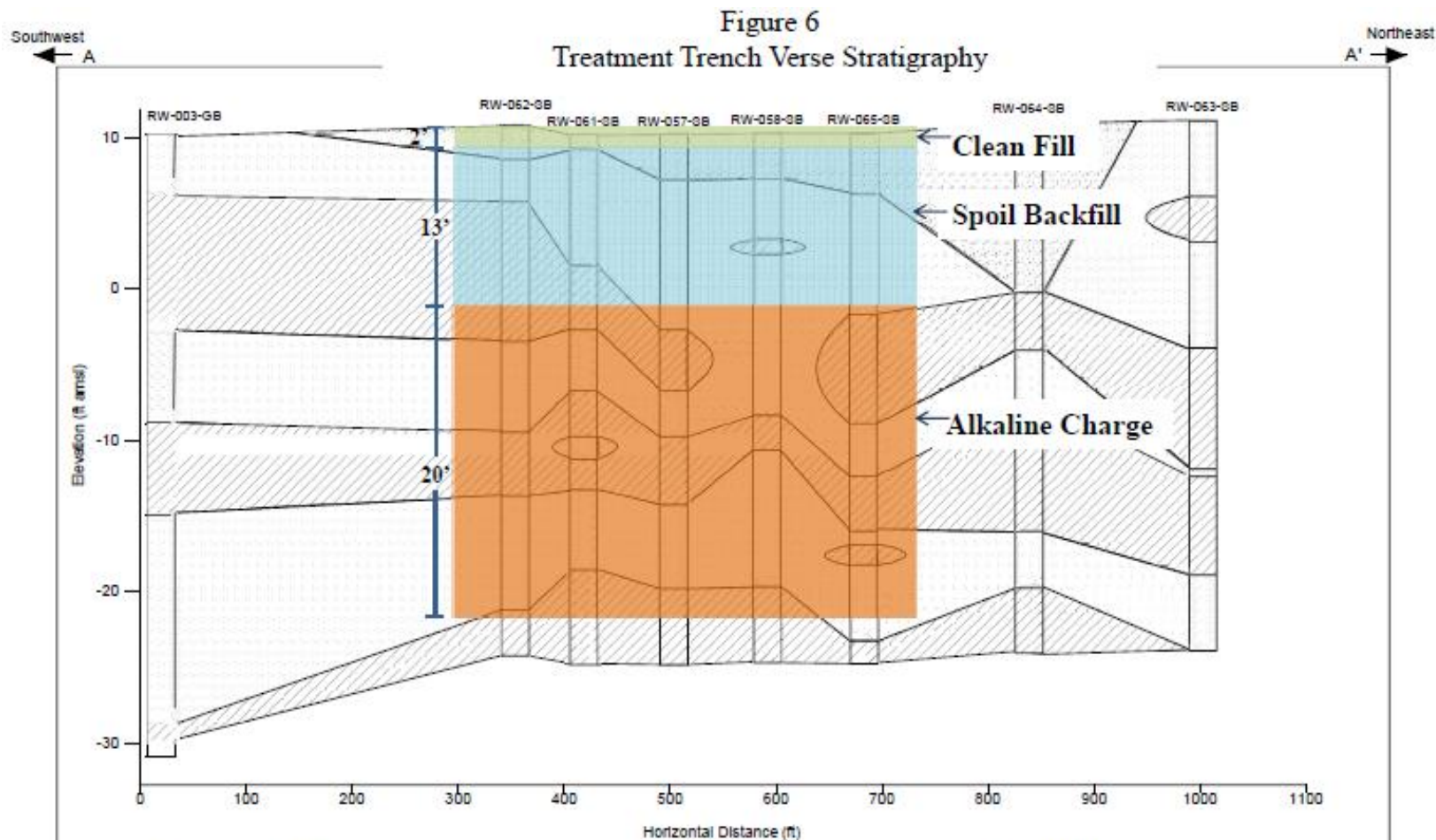
<p>pH Contouring - Intermediate Aerial View July 27, 2016</p>		<p>Figure 2</p>
EnviroAnalytics Group	Tradepoint Atlantic	
ARM Project 150298M	Baltimore County, MD	
<p>ARM Group Inc. "Earth Scientist, Engineer, and Consultant"</p>	<ul style="list-style-type: none"> Piezometer (intermediate) Contour (intermediate) Parcel Boundary 	
	<p>0 60 120 240 Feet</p>	


Interim Measures Parcel A3 Rod and Wire Mill

Treatment Trenches to Raise pH in Intermediate Zone to Address Groundwater Contamination

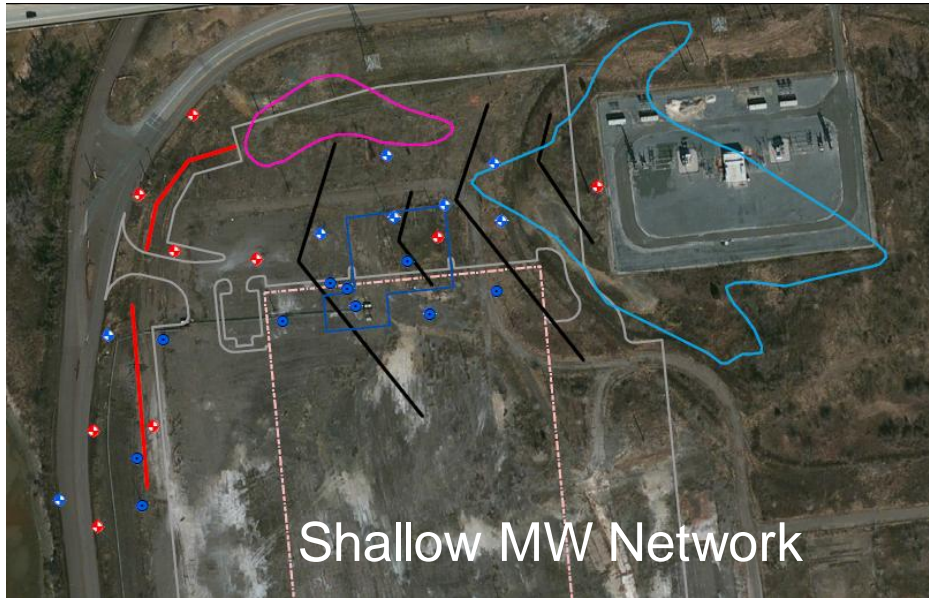


Interim Measures Parcel A3 Rod and Wire Mill



<p>Parcel A3 (Rod & Wire Mill) Cross Section</p> <p>Tradepoint Atlantic Baltimore County, MD</p>	<p style="text-align: center;">Cross Section A-A'</p> <p>EnviroAnalytics Group ARM Project 150298M March 2016</p>	<p style="text-align: center;">LEGEND</p> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></div> Gravel/Slag </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></div> Sand </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></div> Clay </div> <p style="font-size: small;">Note: amsl = above mean sea level Cross-section is vertically exaggerated approximately 14:1</p>
 <p>ARM Group Inc. Earth Resource Engineers and Consultants</p>		

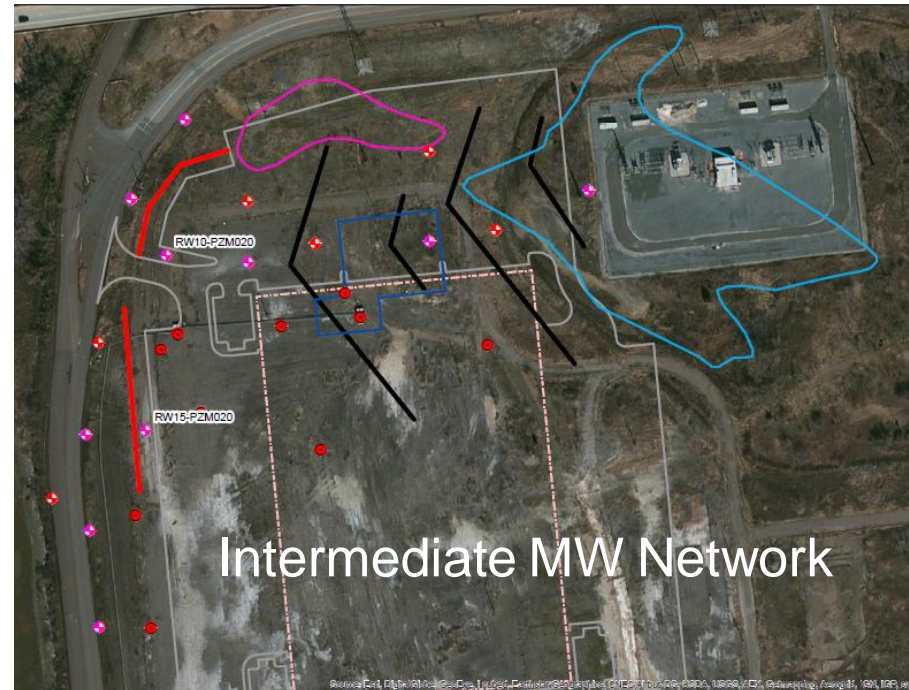
Interim Measures Parcel A3 Rod and Wire Mill



Shallow and Intermediate Monitoring Well Network to be Modified for New Construction and to Provide Additional Monitoring Points to Determine Trench Effectiveness

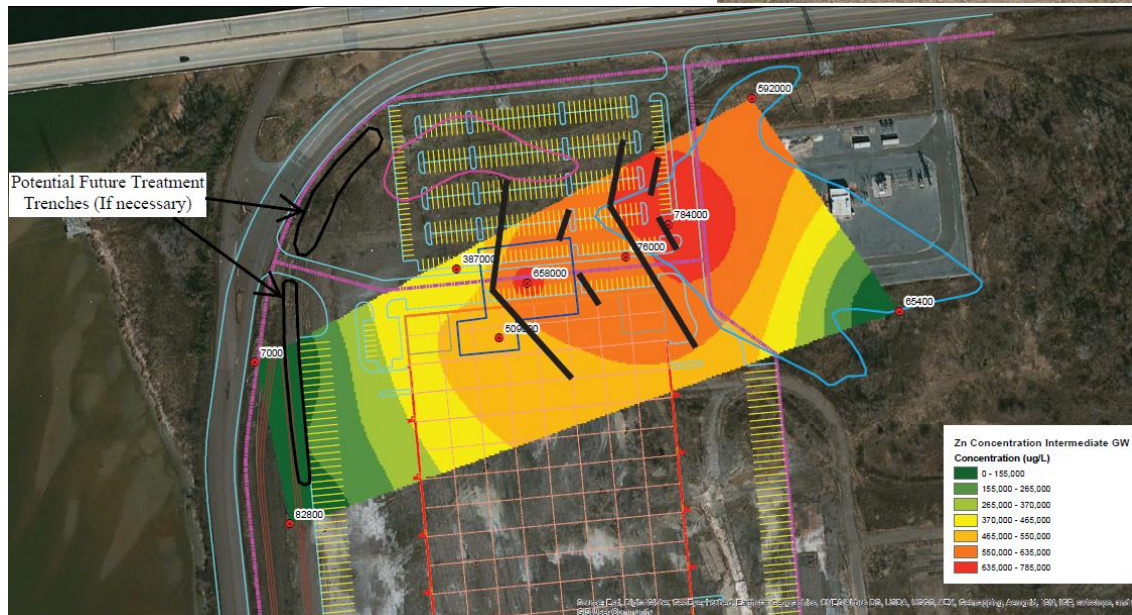
Pumping Well RW-10 to be relocated

Wells proposed for monthly and quarterly monitoring of pH, Zinc and Cadmium



Interim Measures Parcel A3 Rod and Wire Mill

Recovery Well
Pumping will
continue after
Trench Installation



Based on
Performance
Pumping System
may be shut off or
additional Trenches
Installed or other IM
Implemented

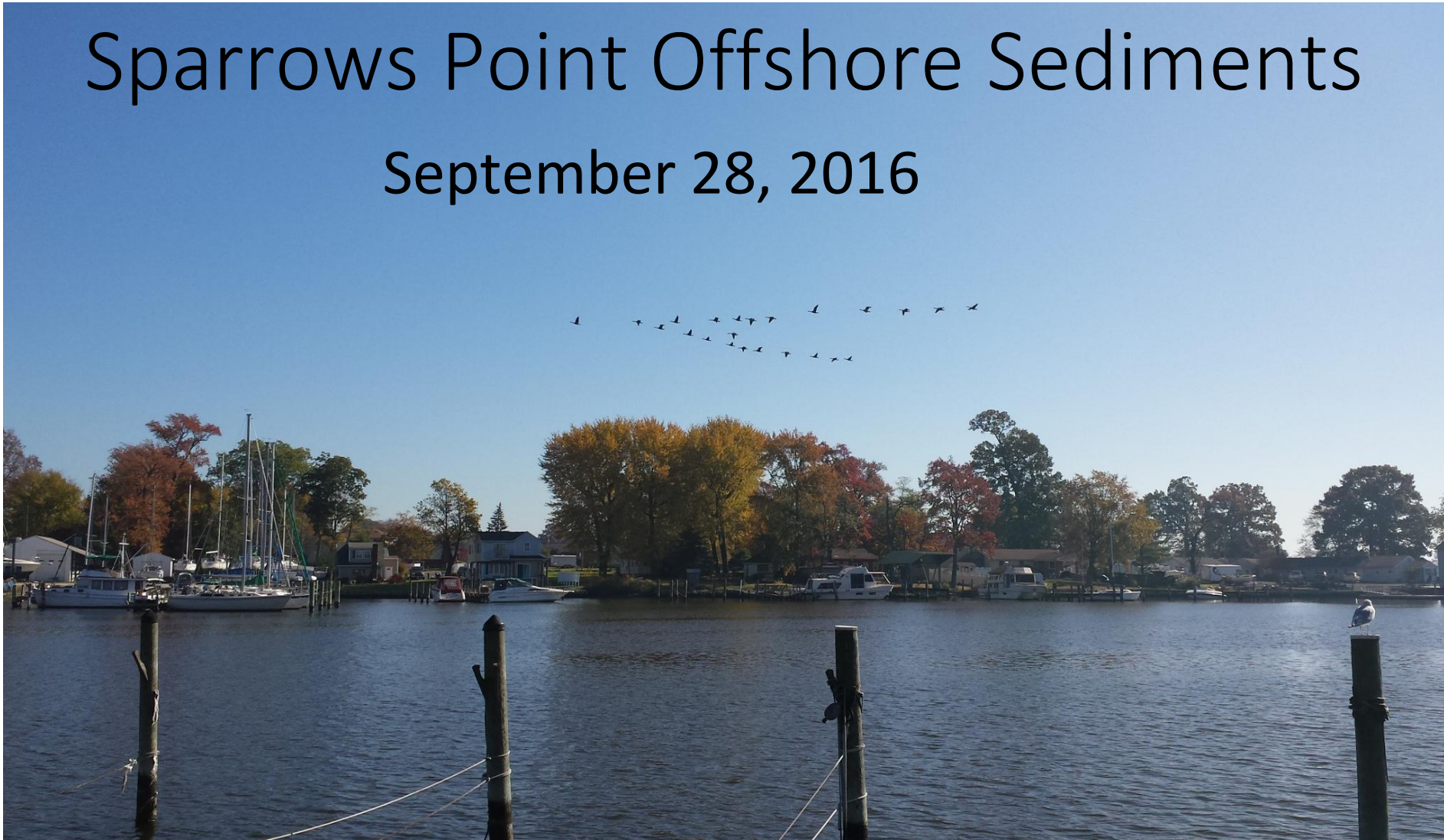


Off-Shore Update



Sparrows Point Offshore Sediments

September 28, 2016





Gregory Ham

On Scene Coordinator

Office of Preparedness and Response
Hazardous Site Cleanup Division (Superfund
Program)
Fort Meade, MD

Sparrows Point Offshore Contamination

- Superfund program (CERCLA) has taken on the offshore work as it has the authority to manage the funds set aside by the Settlement Agreement.
- Some funding by Settlement Agreement for investigation, cleanup, and oversight
- Continuing to coordinate with the Maryland Department of the Environment

Removal Process (Non-time Critical)

- Assessment of site
- Engineering Evaluation/Cost Analysis
 - Public Participation
- Action Memorandum
 - Identifies problem, describes work to be done, sets cost ceiling
 - Authority to do work

Engineering Evaluation/Cost Analysis

- Site Characterization
- Identification of Removal Action Objectives
- Identification and Analysis of Removal Action Alternatives
- Comparative Analysis of Removal Alternatives
- Recommended Removal Action Alternative

Public Participation

- Administrative Record File established
- Notice of Availability
- 30-day public comment period
- Written response to significant comments
- Community Involvement Plan



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Offshore Areas

- Northwest area (Phase 1)
- Southeast Area (Phase 2)
- Coke Point



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North West Area

- Assessment completed
- Engineering Evaluation/Cost Analysis (EE/CA) being initiated using an EPA contractor (EA Eng., Science and Technology).
- Estimated completion end of CY 2016 – **may be early 2017.**
- EE/CA will evaluate cleanup options/costs

North West Area – Bear Creek

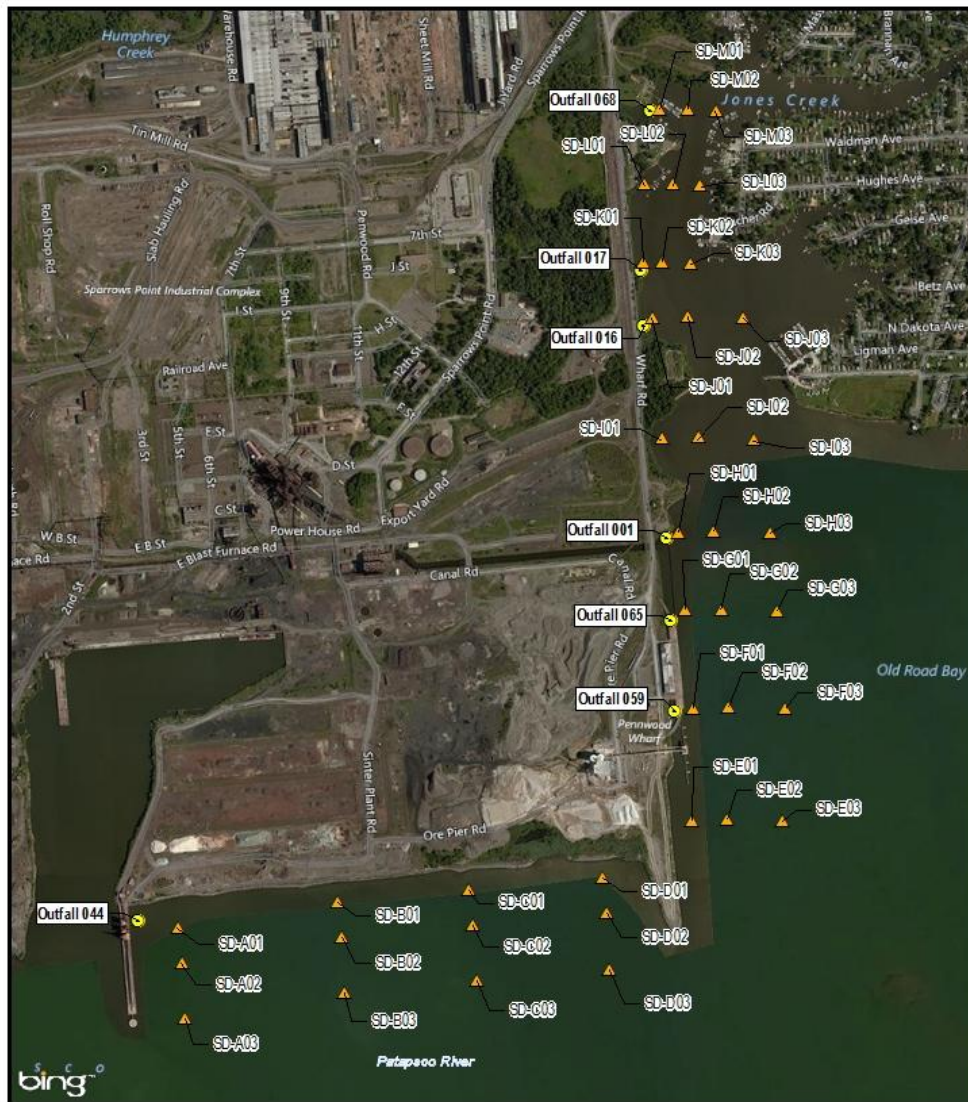


South East Area

- First Round Sampling June 20 – 23, 2016
 - 13 transects, 39 sampling locations for surface sediments
- The need for a second round being evaluated
 - Core sampling
 - Stormwater samples from 7 outfalls



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Legend

- Proposed Sediment Sample Location
- Approximate Location of Active Stormwater Outfall

Imagery: ESRI, Bing
 Mapping Services

Coordinate System:
 WGS84 UTM Zone 18N Feet

0 1,350
 Feet

Sparrows Point Sediment Assessment
Baltimore, Baltimore County, Maryland

Figure 3
Sediment Sample Locations

TDR W01-15-08-005
 Contract: SP-15-15-02
 Prepared: 4/15/2016

File: Y:\EPA_Regio_III\Sparrows_Point\MXD\Prop_Sed_Loc.mxd, 4/15/2016 9:29:40 AM, nlsdc

Sampling along the Southern Shore





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Looking North into Jones Creek



Sample Results

- Received recently
- Currently being evaluated
- Will be released in the next few weeks
- Placed on the MDE website



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Coke Point Area

- Investigation completed

- Awaiting decision

Coke Oven Area Interim Measures



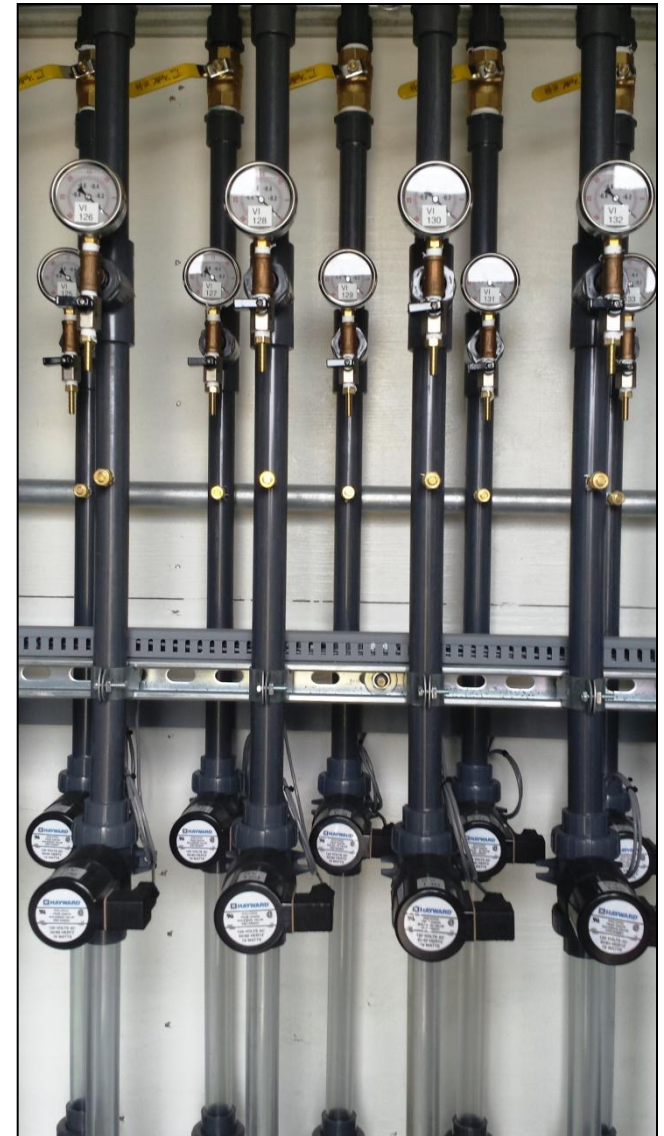
Former Coke Oven Area
Sparrows Point Terminal, LLC



Coke Oven Area Interim Measures-Cell 6 Upgrade



Coke Oven Area Interim Measures-Cell 6 Upgrade



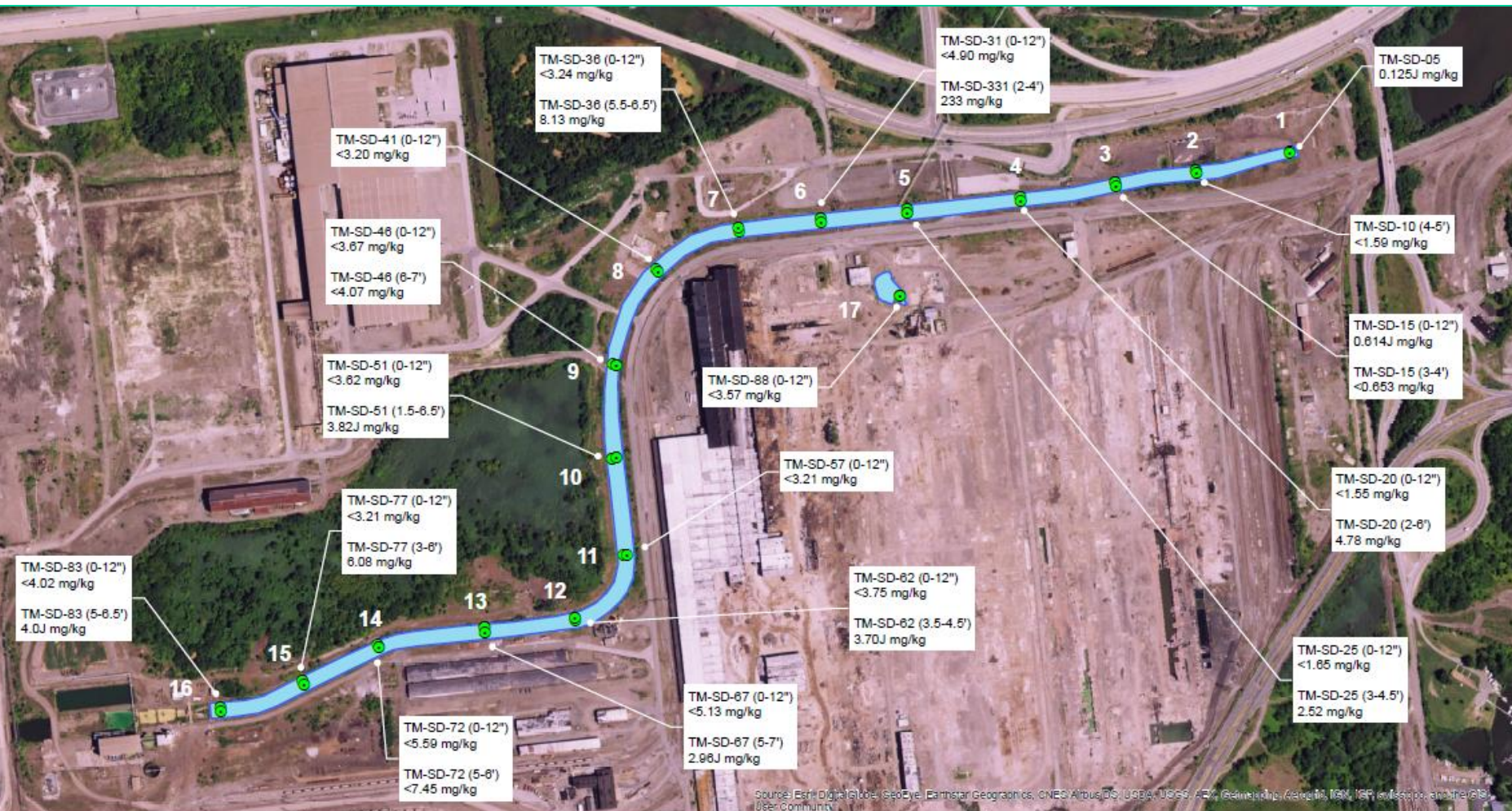
Parcel A1 Update



Parcel A1 Update



Tin Mill Canal Update

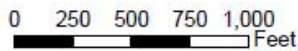


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community




Environmental Engineers

1 inch = 500 feet



0 250 500 750 1,000 Feet

**Tin Mill Canal
Sediment Sampling
Total PCB Results**

Legend

-  Sediment Sampling Locations (Previously Sampled)
-  Tin Mill Canal Extent

**Figure
2**

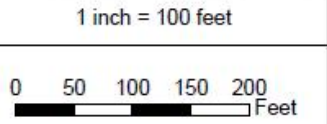
Sampling Scheduled Fall 2016

Transect 7
<3.24 mg/kg (0-12")
8.13 mg/kg (5.5-6.5')

Transect 6
<4.90 mg/kg (0-12")
233 mg/kg (2-4')

Transect 5
<1.65 mg/kg (0-12")
2.52 mg/kg (3-4.5')

Source: Cal. Dept. of State Resources, California Department of Toxic Substances Control, USEPA, USEPA A/C, Geomatrix, Aerobic, ION, IGR, and the PCB User Community



Tin Mill Canal PCB Delineation Proposed Sample Locations

Legend

-  PCB Delineation Sample Locations
-  Sampling Transects

PCB results referenced are Total PCB from previous sampling event

Demolition Update Pennwood Power Plant Asbestos Removal



Demolition Update

Pennwood Power Plant Asbestos Removal





Upcoming Work-EPA Remedy Decision



- EPA is preparing a proposed Remedy Decision for Parcels A-1 (FedEx) and B-4-1 (RoRo)
- This is a requirement under the Federal Settlement Agreement
- EPA anticipates incorporating into its proposed Remedy the remedies in developed under MDE AOC for those parcels
- EPA will seek public comments during thirty day comment period
- We are projecting the comment period for December/January
- The final remedy decision will be incorporated into the Settlement Agreement and become enforceable by EPA.



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Questions ?





For Additional Information From EPA On Shore Activities :

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For Additional Information From EPA On Off-Shore Activities :

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For Additional Information From MDE

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Visit the MDE Website!

<http://www.mde.maryland.gov>