

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

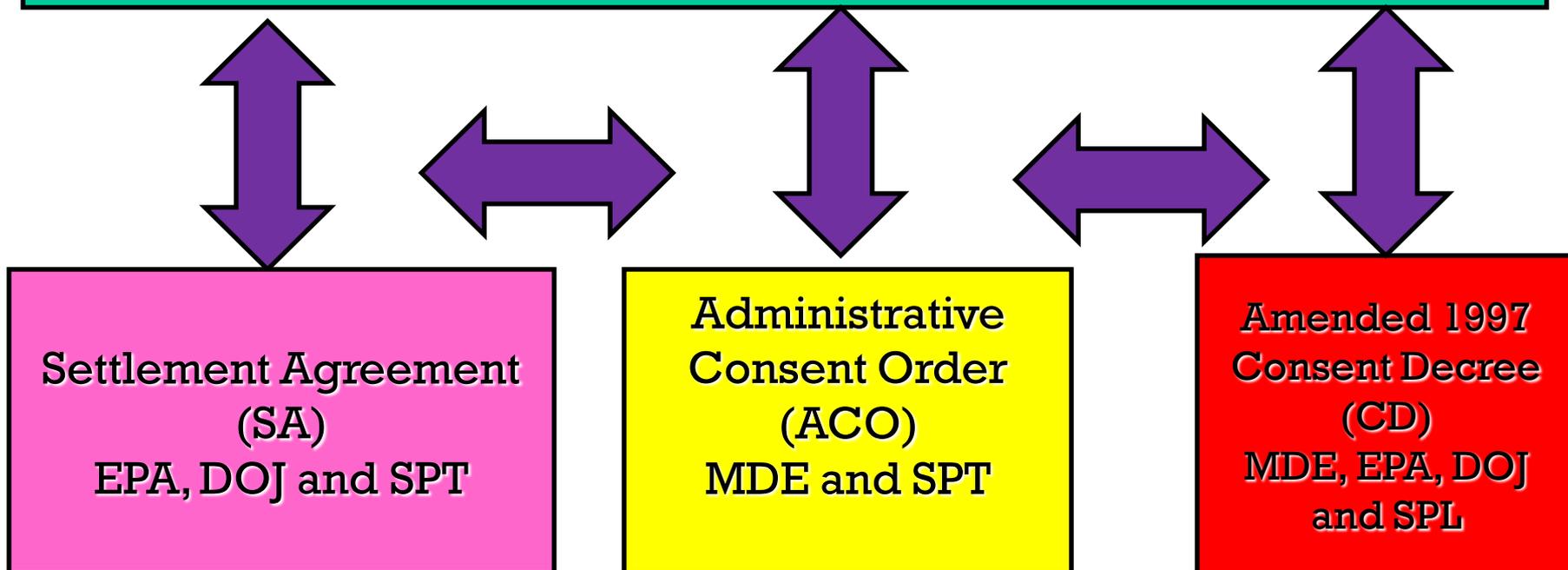


**September 28, 2016**

### 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





Maryland  
Department of  
the Environment

# Site Investigation Status



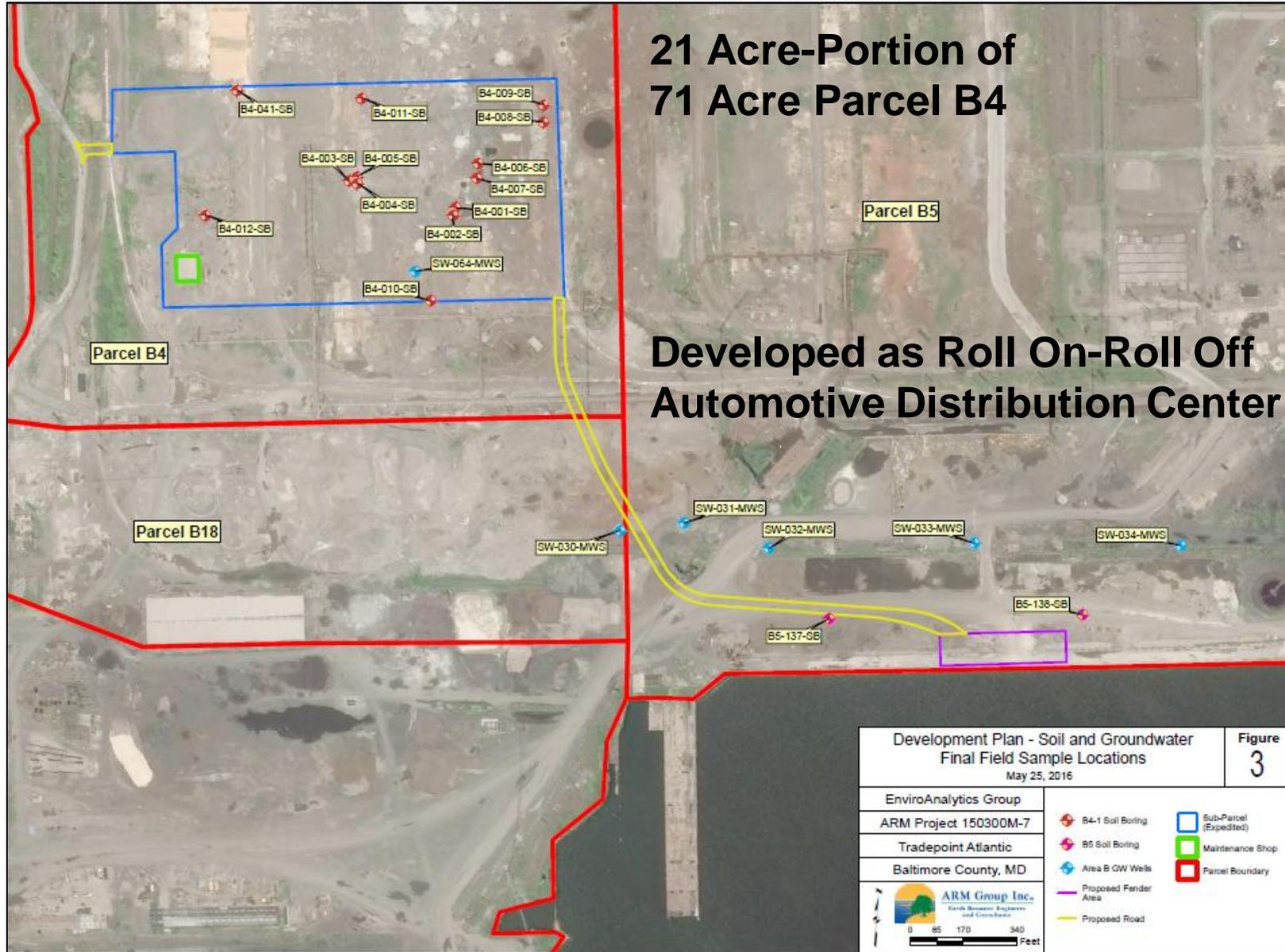
# Master Development Plan Tradeport Atlantic



Evaluation of risks and development of remedial measures as part of the redevelopment process relies on the information collected from site-wide studies conducted over 20 years and current soil and groundwater samples collected under the ACO procedure.

This process ensures that redevelopment occurs in a way that protects human health and the environment.

# 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

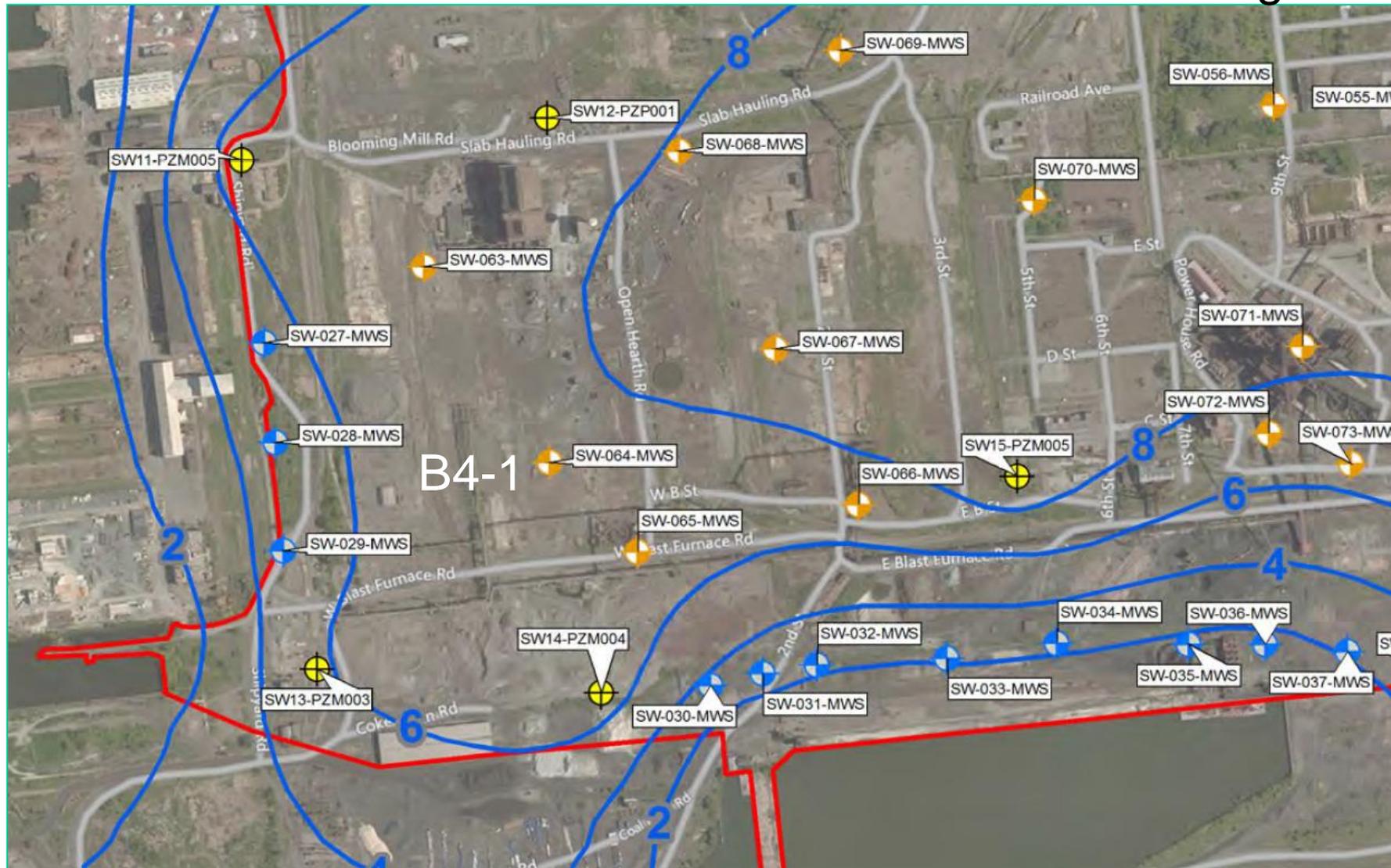
Two Soil Borings in vicinity  
and Six Soil Samples

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



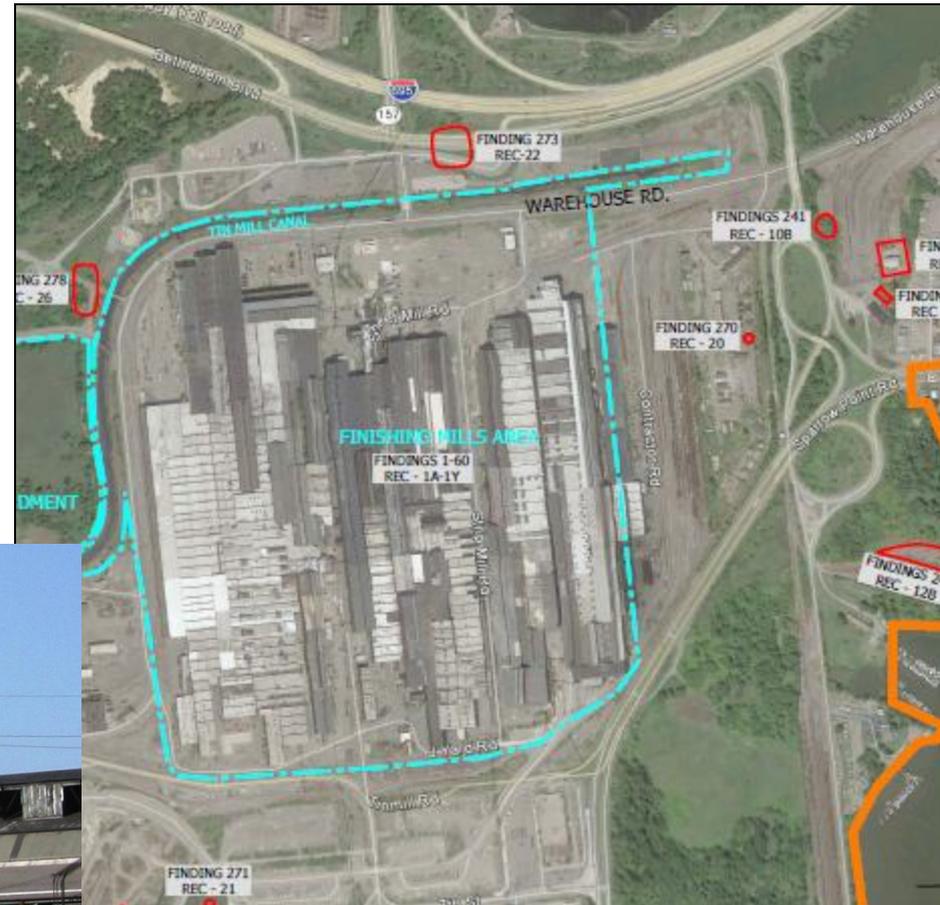
Construction Completed

# Development Work Plan Parcel B22 Phase 1



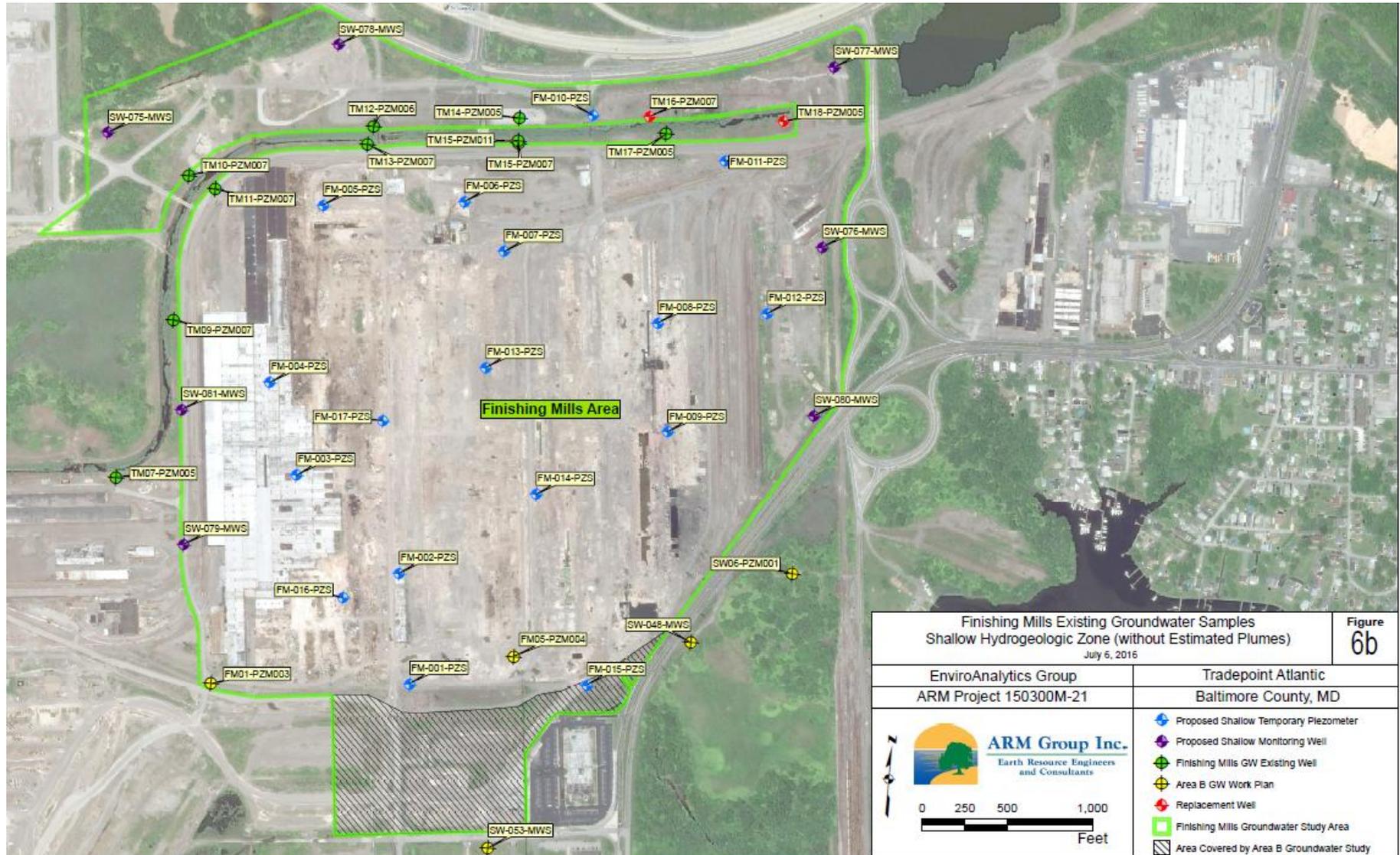
## Parcel B22

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

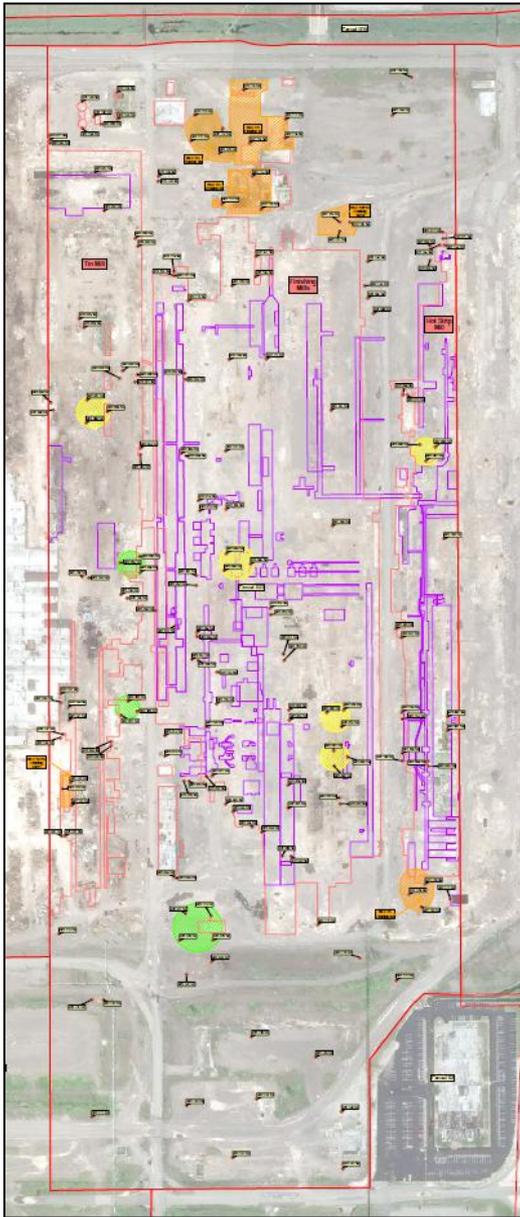


# Development Work Plan Parcel B22 Phase 1

## Parcel B22 Included within Finishing Mills Groundwater Investigation



# Development Work Plan Parcel B22 Phase 1

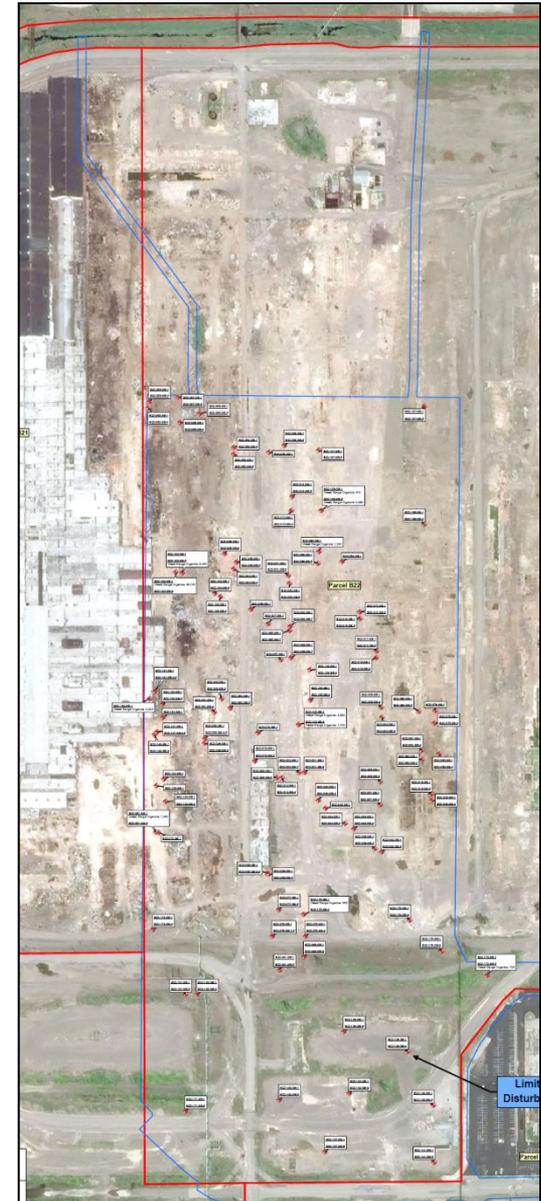


Phase II Investigation  
B22 Parcel  
179 Borings  
386 Soil Samples

B22 Phase 1  
102 Borings  
211 Samples

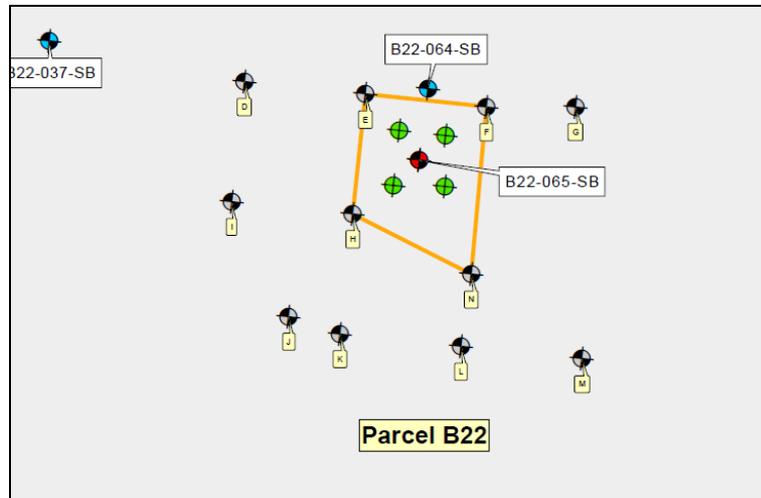
Additional delineation  
samples collected for PCBs,  
PAHs, Lead and Arsenic  
after Phase II at B22 Phase 1

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

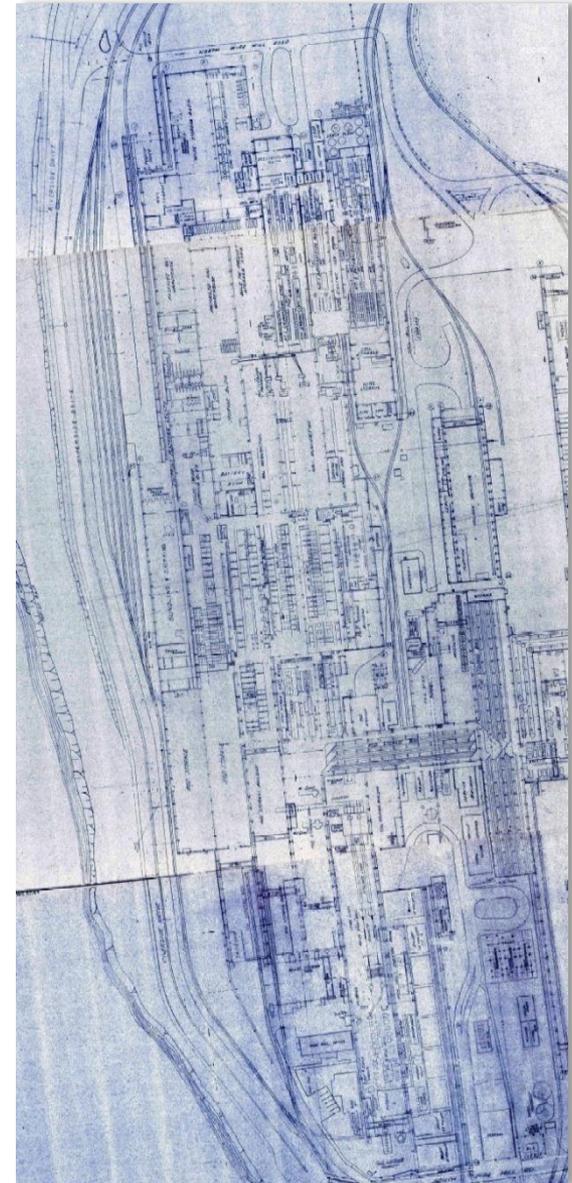
The former mill produced rod and wire products from 1940's to early 1980's

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

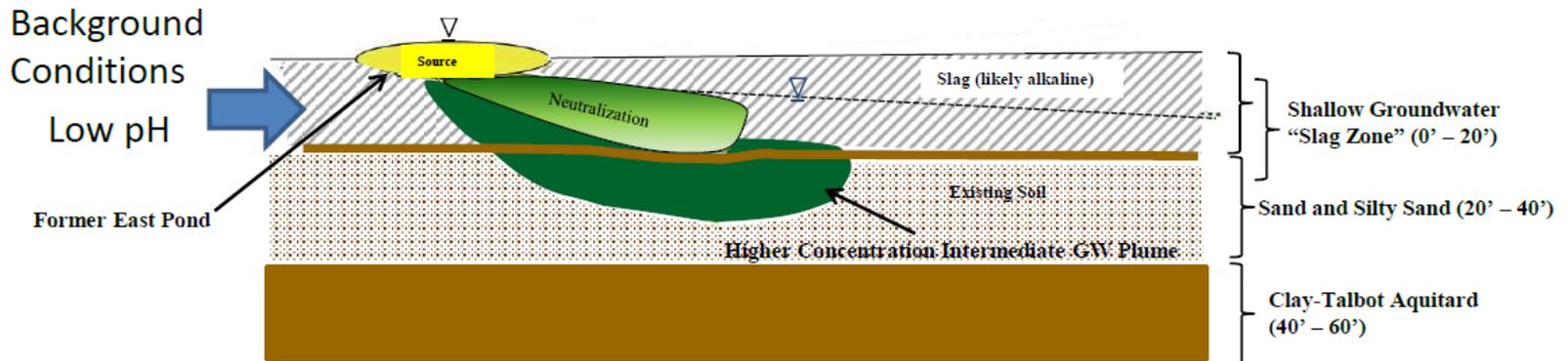


## Interim Measures Parcel A3 Rod and Wire Mill

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.





Maryland  
Department of  
the Environment

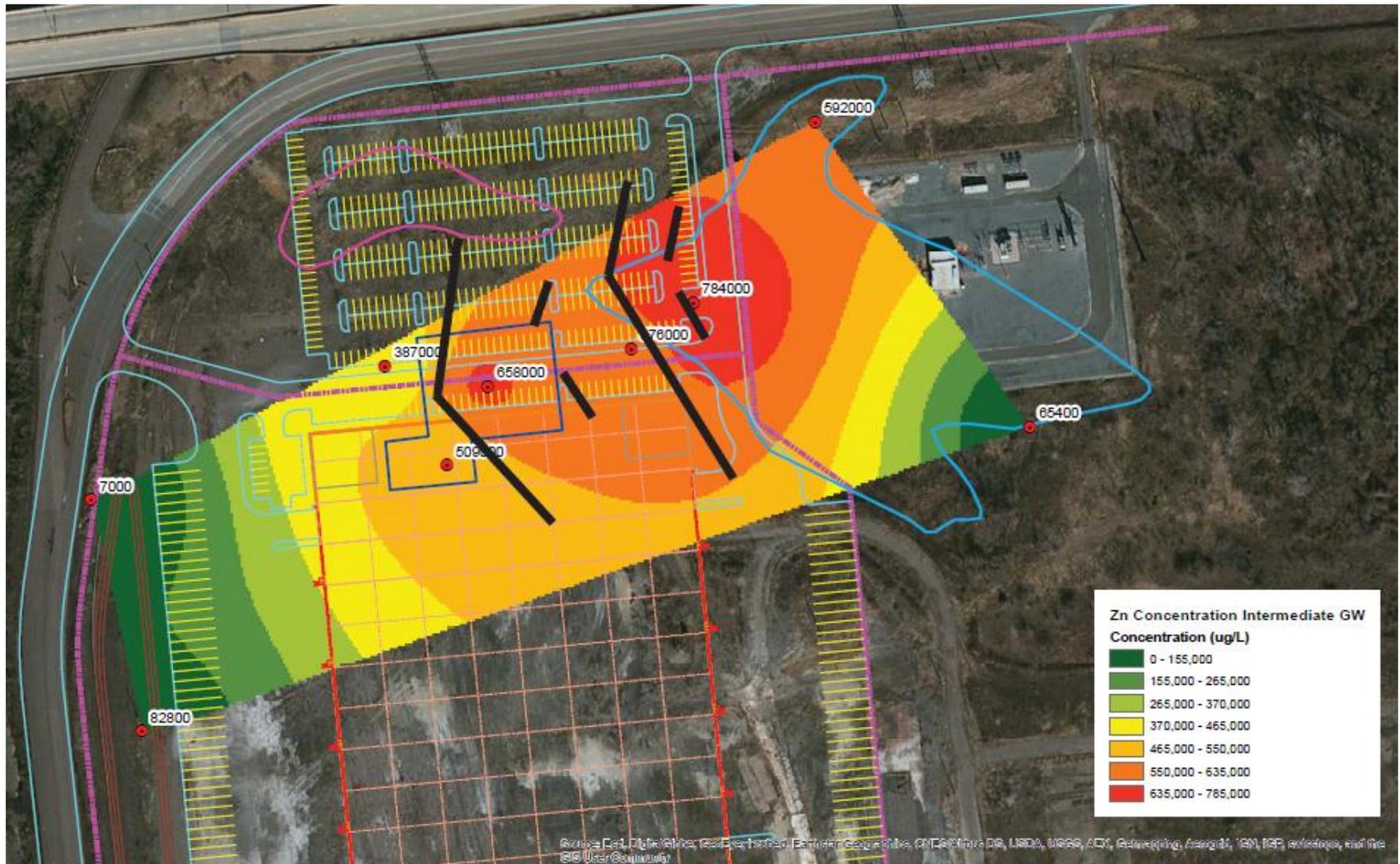
# Interim Measures Parcel A3 Rod and Wire Mill



<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"> <li> Piezometer (intermediate)</li> <li> Contour (intermediate)</li> <li> Parcel Boundary</li> </ul>	
	<p>0 60 120 240 Feet</p>	

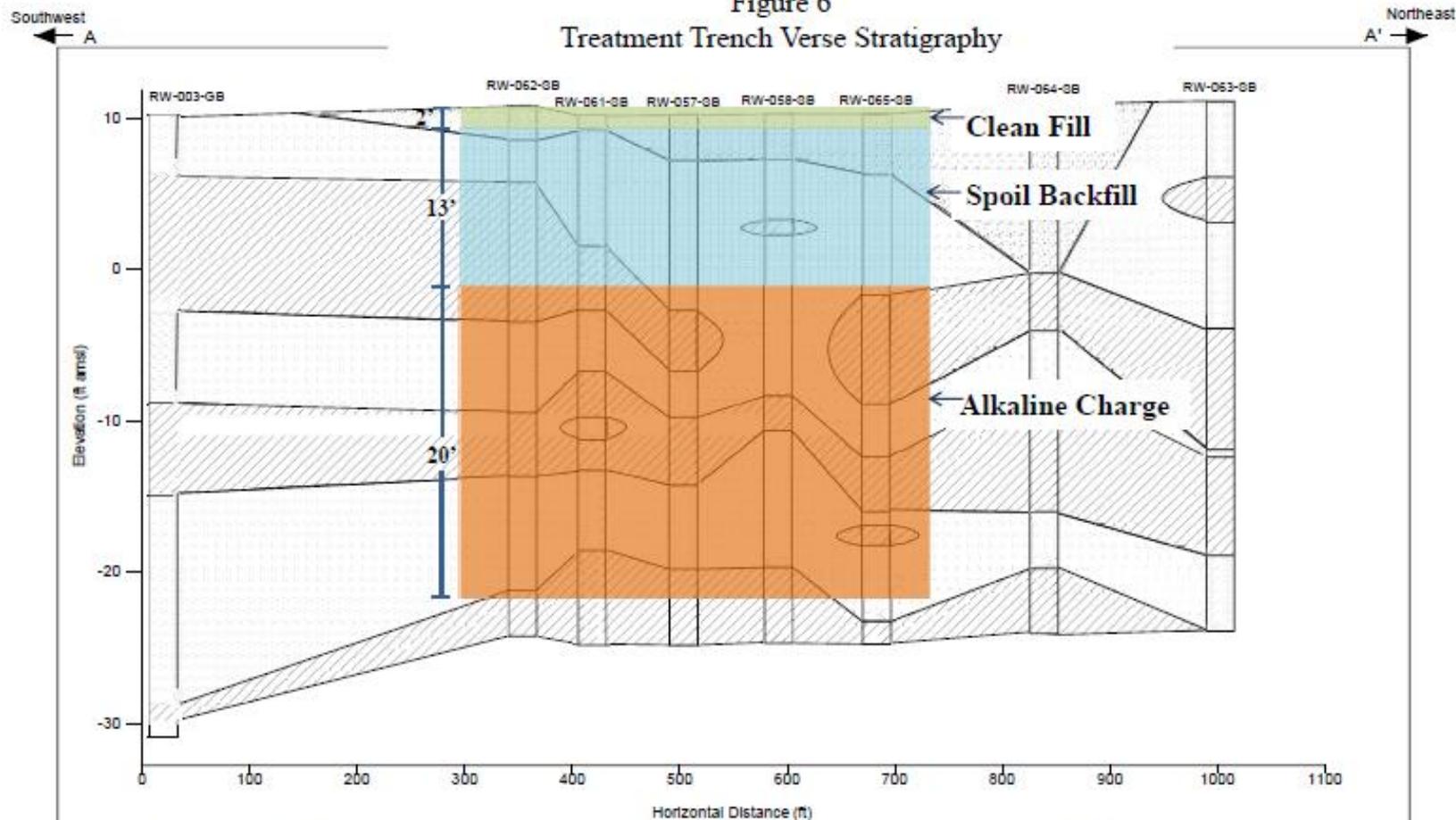
# Interim Measures Parcel A3 Rod and Wire Mill

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



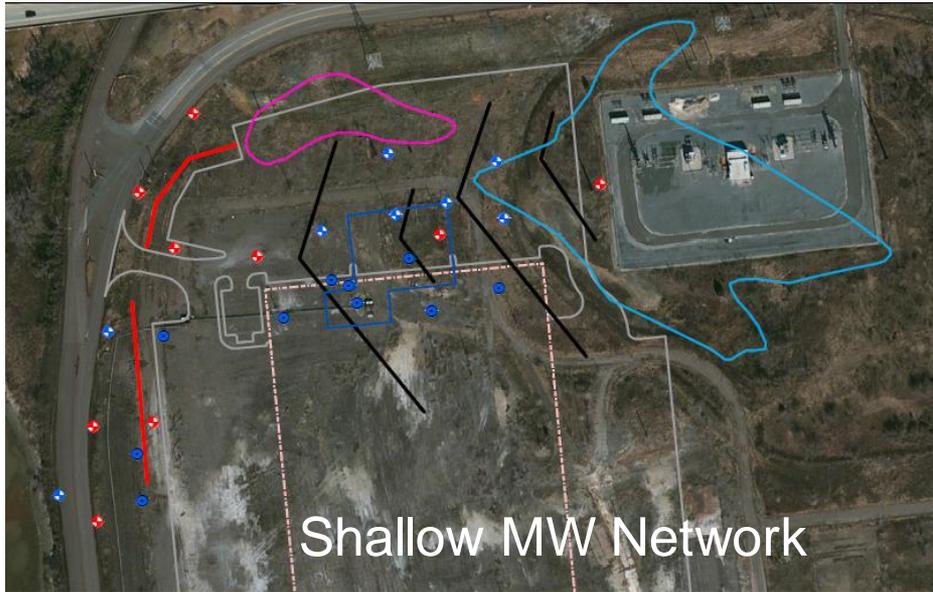
# Interim Measures Parcel A3 Rod and Wire Mill

Figure 6  
Treatment Trench Verse Stratigraphy



<p>Parcel A3 (Rod &amp; Wire Mill) Cross Section</p> <p>Tradepoint Atlantic Baltimore County, MD</p>	<p><b>Cross Section A-A'</b></p>	<p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li> Gravel/Slag</li> <li> Sand</li> <li> Clay</li> </ul> <p>Note: amsl = above mean sea level Cross-section is vertically exaggerated approximately 14:1</p>
 <p><b>ARM Group Inc.</b> Earth Resource Engineers and Consultants</p>	<p>EnviroAnalytics Group ARM Project 150298M March 2016</p>	

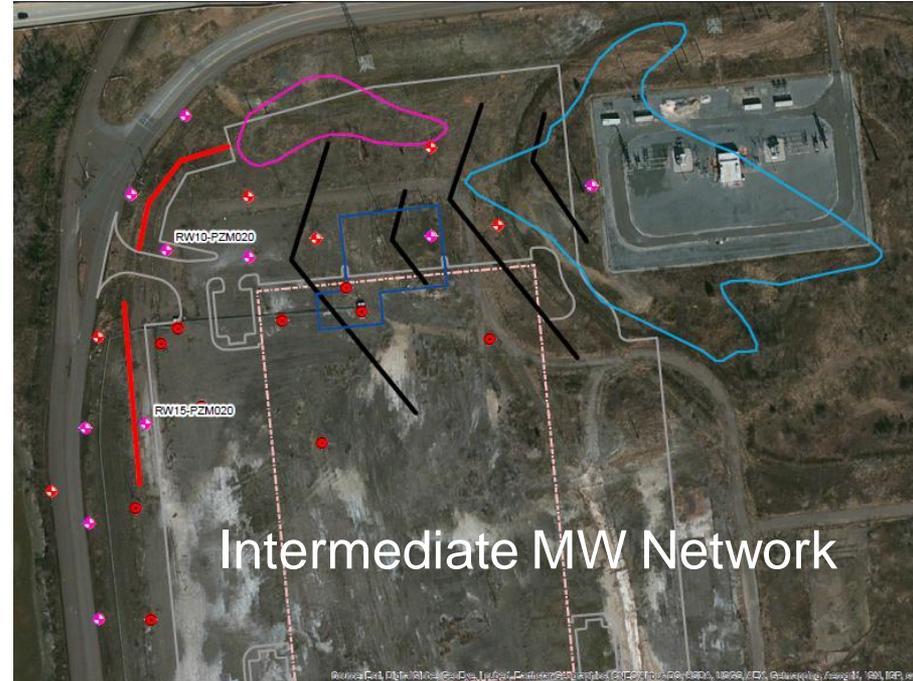
## Interim Measures Parcel A3 Rod and Wire Mill



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

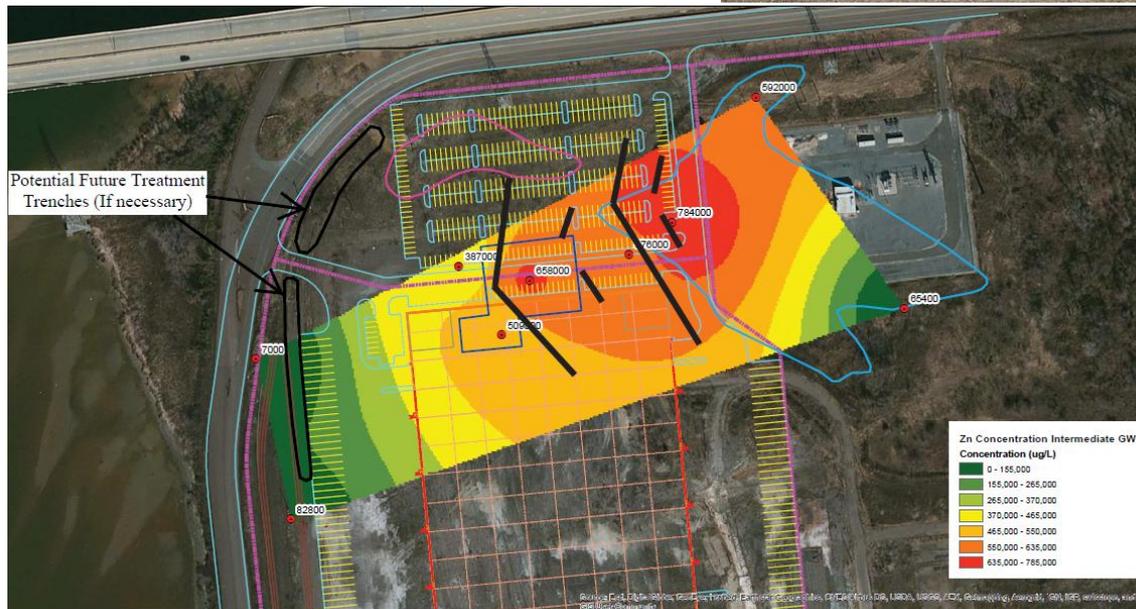
Pumping Well RW-10 to be relocated

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



Maryland  
Department of  
the Environment



# Offshore Areas

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



Maryland  
Department of  
the Environment



# 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



**Legend**

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

Imagery: ESRI, Bing  
Mapping Services



Coordinate System:  
WGS84 UTM Zone 18N 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



# Sampling along the Southern Shore





Maryland  
Department of  
the Environment





Maryland  
Department of  
the Environment





Maryland  
Department of  
the Environment



# 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



Maryland  
Department of  
the Environment

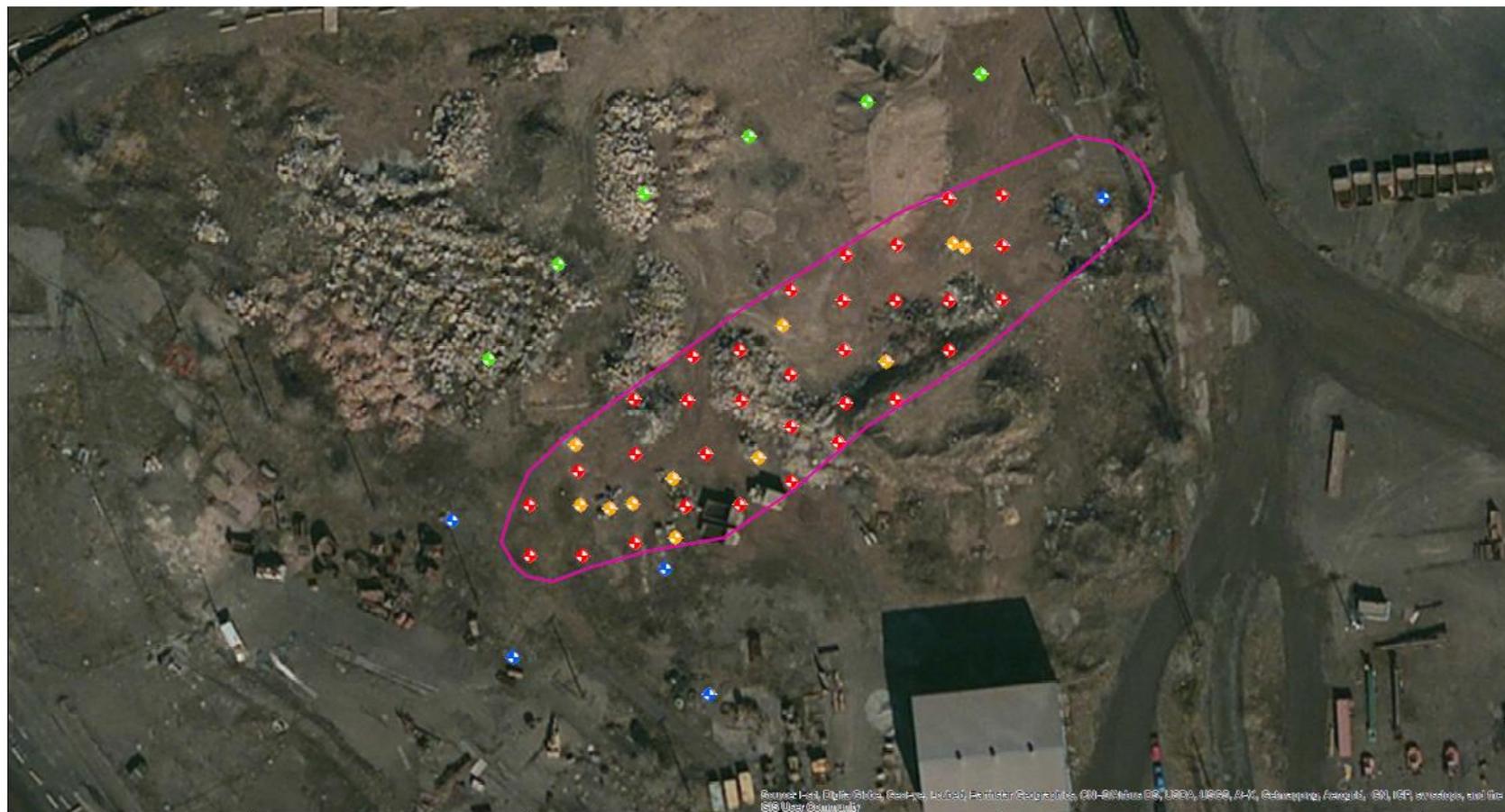


# Coke Point Area

- Investigation completed
  
- Awaiting decision



# Coke Oven Area Interim Measures-Cell 6 Upgrade



Source: EnviroAnalytics, Inc. (EA), Geospatial Solutions, Inc. (GSI), and the U.S. Environmental Protection Agency (EPA). EA, GSI, and EPA are not responsible for the accuracy or completeness of the information presented on this map.

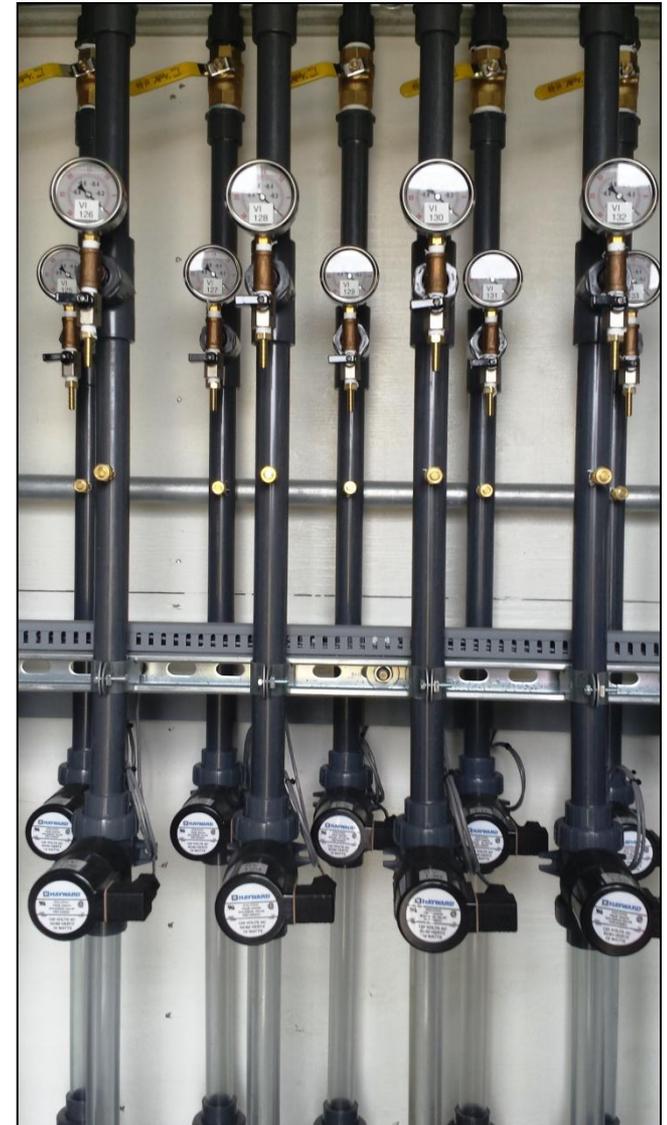
	Date: 1/26/2016	<h2>Cell 6 IM System Upgrade</h2>	<b>Legend</b>		<b>Figure 1-2</b>
	0 25 50 100 Feet 		<ul style="list-style-type: none"> <li> Existing Monitoring Wells to be used for Extraction</li> <li> Existing Monitoring Wells Not to be Used</li> <li> Proposed Extraction Wells</li> <li> Proposed ReInjection Wells</li> <li> Estimated Source Area Extent</li> </ul>		

43 New Extraction Wells-Vacuum Pump Removes Liquid and Vapor  
Anticipated Start Date October 2016

# 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

 <p><b>EnviroAnalytics</b> Group Environmental Engineers</p>	<p>1 inch = 500 feet</p> 	<p><b>Tin Mill Canal Sediment Sampling Total PCB Results</b></p>	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="color: green;">●</span> Sediment Sampling Locations (Previously Sampled)</li> <li><span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Tin Mill Canal Extent</li> </ul>	<p><b>Figure</b> <b>2</b></p>
---	--	--	---	-----------------------------------

## 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, IGP, and the PCB User Community



1 inch = 100 feet

0 50 100 150 200  
Feet

### Legend

-  PCB Delineation Sample Locations
  -  Sampling Transects
- PCB results referenced are Total PCB from previous sampling event

# Demolition Update

## Pennwood Power Plant Asbestos Removal





Maryland  
Department of  
the Environment

# 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.

# Questions ?





---

## **For Additional Information From EPA On Shore Activities :**

**Erich Weissbart, P.G  
Remedial Project Manager  
U.S. Environmental Protection Agency Region 3  
410-305-2779  
Weissbart.erich@epa.gov**



# **For Additional Information From EPA On Off-Shore Activities :**

**Gregory Ham  
On Scene Coordinator  
Eastern Response Branch  
Office of Preparedness and Response  
Hazardous Site Cleanup Division  
USEPA  
701 Mapes Road  
Fort Meade, MD 20755  
410-305-2776  
Ham.Greg@epa.gov**



## **For Additional Information From MDE**

**Barbara Brown**

**Land Management Administration**

**Maryland Department of the Environment**

**1800 Washington Boulevard**

**Baltimore, Maryland 21230**

**(410) 537-3493**

**Barbara.brown1 @maryland.gov**

**Visit the MDE Website!**

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