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

February 26, 2015
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.

Settlement Agreement (SA) EPA, DOJ and SPT

Administrative Consent Order (ACO) MDE and SPT

Amended 1997 Consent Decree (CD) MDE, EPA, DOJ and SPL
Administrative Milestones

• ACO Effective Date September 18, 2014.
• SPT provided a copy of the Trust Agreement and documentation that the Trust has been funded with $48 million to MDE.
• SPT provided $5 million bond to MDE.
• SA Signed by EPA, DOJ and Sparrows Point Terminal, LLC in September 2014.
• After 30-day public comment period and EPA review of public comments, EPA finalized SA on November 25, 2014.
• SPT provided $3 million to EPA to conduct offshore investigation and remediation.
Technical Milestones

January 23, 2015 – Required SA and ACO work plans submitted to the Agencies for the following areas:

- Area A
- Coke Oven Area
- Rod and Wire Mill

January 23, 2015 – Required Area B Work Plan submittal schedule provided to Agencies

February 2, 2015 - Area A1 Revised Work Plan Approved

February 5, 2015 – Area A1 field work began

February 9, 2015 - Central Receiving Warehouse Work Plan approved

February 19, 2015 - Revised Tin Mill Canal Sediment Sampling and Analysis Plan received
Environmental Work Process

1. Assess Site Conditions
2. Evaluate Risk Based on Industrial Land Use
   - Risk Identified
     - Propose Cleanup Plan
       - Public Participation
   - No Risk
     - Regulatory Sign Off EPA & MDE
       - Implement Clean up Plan
       - Redevelop
Sampling Data for Risk Assessment

- Inhalation
  - Ingestion of soil
  - Dermal contact

- Inhalation of volatiles
  - Ingestion of water
  - Dermal contact

- Dermal contact

- Fish Consumption

- Runoff
  - Soils
  - Groundwater discharge

- Air Transport

- Leaching

- Vapor Intrusion

- Sediments

- Groundwater Transport

- Water Table
Area A

Development Area A - Exhibit A

789 Acres
Work plan includes collecting samples of soil, soil gas and ground water
Area A Can be Divided into Subareas based on Previous and Future Use
Area A1 Environmental Assessment Work in Progress
April 24, 2015 - Submit Phase II Investigation Work Plan for Area B Subareas B1, B2 and B3

April 22, 2016 - Submit Phase II Investigation Work Plan for Area B Subareas B4, B5 and B6

Other Subareas in B may have work plans submitted ahead of proposed schedule depending on site development requirements.
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.

Aerial View 1982
Rod and Wire Mill Current Conditions

Zinc Plume >100 PPM
Approximately 4.3 Acres

Former Sludge Bin Storage Area

Former Northwest Pond

Possible PRB Wall

Former East Pond

Groundwater Extraction Well - Pump and Treat System

Groundwater Extraction Well - Pump and Treat System

Conveyance Pipeline - Pump and Treat System
Approximately 4,500 feet

Cadmium Plume >1 PPM
Approximately 4.5 Acres

Former Rod and Wire Mill Area
Sparrows Point Terminal, LLC
Dissolved cadmium and zinc plumes in sandy aquifers.

31 existing monitoring wells in shallow and intermediate zones, and 2 recovery wells in intermediate zone

Ground water pumped to Humphreys Creek Waste Water Treatment Plant for treatment

From 1987 to the end of 2014 the groundwater pumping system has removed:

10,745 lbs of cadmium and 345,896 lbs of zinc
Goals:

Further delineation of cadmium and zinc in soil and groundwater

Investigate the presence of other potential contaminants

Feasibility studies by bench and field scale testing of clean up alternatives including passive reactive walls and soil stabilization
Conveyance for stormwater runoff and groundwater baseflow from 800 acres of the Sparrows Point site.

During active steel making operation received wastewater discharges from numerous manufacturing facilities associated with steelmaking and steel finishing operations.

Under current conditions average flow during dry weather 3,000 to 4,000 gallons per minute (gpm) but can increase to 50,000 gpm during storm events.

Water collected from Tin Mill Canal routed to Humphrey’s Creek Waste Water Treatment Plant for treatment prior to discharge under NPDES permit to outfall 14.

Approximately 7,500 feet in length.

30-50 feet wide and 15 feet below grade.

Constructed in 1960’s from slag.
Cleanout goal to remove sediments, provide erosion and sediment control, stabilization of canal floor and sidewalls and subsequently improve quality of water discharge from site.

Work plan to determine volume of sediments to be removed and disposal options

Collect samples of sediments for physical and chemical properties at 17 transect locations
Draft Tin Mill Canal Work Plan Sediment Sampling Locations
Coke Oven Area Historic Operations
Draft Coke Oven Pre-Design Investigation Work Plan Goals

Conduct feasibility studies of alternatives including enhanced vacuum recovery, passive containment walls, and bioremediation for incorporation into final remedy.

Delineate lateral extent of free phase product in Cell 2 and Cell 6 areas and evaluate potential communication.

Delineate lateral and vertical extent of DNAPL in Cell 4/5 Area.

Evaluate effectiveness of Cell 1 and Cell 3 treatment systems.

Define Area-Wide groundwater elevations, flow directions and gradients.

Define Area-Wide dissolved phase constituent concentrations in the shallow and intermediate groundwater zones.
• Cell 1- Shallow zone air sparging and soil vapor extraction. Destroyed approximately 12,445 lbs of hydrocarbons in 4 years
• Cell 2-Intermediate zone groundwater extraction and shallow zone air sparging and soil vapor extraction Pumping began in September 2014 and removed approximately 3,424 lbs of hydrocarbons in 5 months
• Cell 3-Shallow zone air sparging and soil vapor extraction. Destroyed approximately 1,444 lbs of hydrocarbons in 3 years
• Cell 4-Anaerobic bioremediation abandoned due to ineffectiveness
• Cell 5 Shallow zone duel phase extraction of napthalene Pumping began September 2014 and destroyed approximately 44 lbs of hydrocarbons in 5 months
• Cell 6 Shallow zone product recovery of benzene. Recovered approximately 88,649 lbs of hydrocarbons in 5 years. Three new skimmer pumps added in October 2014 recovered 685 gallons this quarter
Scope of Offshore Investigation

Sparrows Point Offshore Investigation
- Phase 1 Northwest Shoreline
- Phase 2 Southeast Shoreline

0 2,000 4,000 6,000 8,000 10,000 Feet
First round sampling included collection of surface sediment from 20 locations, along eight transects.

Surface sediments (6 inch) show elevated metals and high concentrations of oil and grease.

Second round sampling work plan approved by Agencies on January 14, 2014.

Second round sampling plan includes sediment cores (-5 to -6 feet), pore water samples and additional surface sediment samples at co-locations.
Off-Shore Sampling

Will Begin as soon as Weather Permits

Photo credit EA Engineering
Greys Landfill

After an MDE Inspection in December 2014 the following work is being performed as required at Greys Landfill:

- Placement of intermediate cover on side slopes of the landfill above elevation 85’ to 110’.
- Repair of erosion on slopes from 60’ to 100’ elevation of the landfill.
- Repair of the 85’ bench elevation of the landfill and placement of storm water control systems on the 85’ to 110’ elevation side slopes.

Grading and stabilization construction work for the side slopes was initiated on January 20, 2015 and is expected to be complete by the end of March 2015.
Coke Point Land Fill Proposed Monitoring Wells

Additional Wells Approved February 12, 2015
Demolition Plans for Demolition submitted to MDE-Air and Radiation Management Administration (ARMA) for review and approval

Specific plans cover implosion of structures such as the Blast Furnace.

Dust control measures implemented during demolition

Asbestos material removed from buildings prior to demolition

MDE ARMA Performs Periodic Inspections

Demolition materials sorted and recycled
Demolition

Although most of the metal structures can be demolished with “Snips” some metal items must be cut with a torch to a manageable size.

Cutting conducted under a MDE – ARMA Approved Plan
Demolition
In Summary

Sparrows Point Terminal LLC In Compliance with ACO and SA Requirements

Per ACO-First Review of Trust Funding will be completed in March 2015

Work Plans have been Submitted for Rod and Wire Mill, Tin Mill Canal, Coke Oven Area, and Area A

Work proceeding on Area A1

Agencies are reviewing information on other sites for occupancy by potential tenants.

Work Plan for portions of Area B to be submitted to Agencies in April 2015

Work plan for round 2 off-shore samples approved slight delay due to weather-
Final report to be submitted to Agencies in 2015

Compliance work at Greys and Coke Point Landfill proceeding
Revised Stormwater pollution prevention plan (SWPPP) approved February 11, 2015

Site Demolition work is proceeding
In Summary

Sparrows Point site work is proceeding at a much faster pace...
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Questions?