Region 2 serving the people of New Jersey,
New York, Puerto Rico and the U.S. Virgin Islands

DUPONT POMPTON LAKES WORKS
PUBLIC AVAILABILITY SESSION
RCRA PERMIT MODIFICATION

NOVEMBER 12, 2014

11/19/2014

AGENDA

- Permit Status and Process
- Remedial Action Objectives
- Proposed Remedy For the Pompton Lake Study Area (PLSA) Which Includes Acid Brook Delta (ABD)/Pompton Lake and ABD Upland Soil Areas
- Schedule
- Questions

STATUS OF PERMIT

- Draft Permit Issued November 2011 – Proposed 26-Acre Dredging of ABD
- Public/USFWS Comments - Final Permit Issued February 2013 – Approximately 40-Acre Dredging of ABD
- Permit Appeals by DuPont & Passaic River Coalition - February 2013
- Additional Work Performed to Address Appeal Issues - March 2013 to April 2014

STATUS OF PERMIT

- DuPont Performed Field Investigations Including Sediment Sampling During Period of Permit Appeal (Summer/Fall 2013)
- DuPont Terminated Technical Discussions in April 2014
- EPA Withdrew Permit Modification in April 2014
- Renewed EPA/DuPont Technical Discussions May - October 2014 and DuPont Performed Additional Field Investigations
- EPA Proposes This Draft Permit Modification – November 2014

WHY IS A PERMIT MODIFICATION NEEDED?

- Original Permit Only Addressed Investigation of Site
- Draft Permit Modification Proposes Remedies For the Pompton Lake Study Area
- Provides Opportunity For Feedback From Community and Stakeholders
- Once Finalized, Remedy Will be Implemented

PROJECT OVERVIEW

- Pompton Lake Study Area
  - Acid Brook Delta (ABD) Sediments
  - Pompton Lake Sediments – Lakeside Avenue Bridge to Pompton Dam

- ABD Upland Soil Areas
  - Upland Soil Areas Outside Wetland/Wetland Transition Zone
  - Areas Within Wetland/Wetland Transition Zone

- Ramapo River Downstream of Pompton Dam to Riverside Park
  - Not the Subject of This Permit Modification
  - Field Investigations Performed/Report in Preparation
  - Subject to a Separate Permit Modification Pending Results

REMEDIATION PROJECT SUMMARY

- Plans Prepared/Updated by DuPont Subject to Review/Approval by EPA/NJDEP
- Remedial Approach for Sediment is Hydraulic and Mechanical Dredging and Restoration
- Remedial Approach for ABD Upland Soil Areas is Conventional Excavation and Restoration
- Dredged Sediment/Removed Soil Will be Disposed Off-site
- Field Oversight by EPA

REMEDIAL ACTION OBJECTIVES (RAOs)

- ABD Upland Soil Areas – Outside Wetland/Wetland Transition Areas
  - Numerical Human Health & Ecological Criteria
  - Surface Soil Removal - Lower of NJDEP Residential Direct Contact Soil Remediation Standards or Ecological Soil Criteria
- ABD Upland Soil Areas – Wetland/Wetland Transition Zone Areas
  - Eliminate/Minimize Potential Exposure of Ecological Receptors to Impacted Surface/Subsurface Soils by Limiting Potential for Mercury Methylation/Bioaccumulation/Translocation
  - Excavation to 3’ Below Final Restoration Elevation or 1’ Below Assumed Water Table Elevation

REMEDIAL ACTION OBJECTIVES (RAOs)

- Acid Brook Delta Sediments
  - No Promulgated Cleanup "Numbers" For Sediments

- Qualitative RAOs to Set Goals for Protecting Human Health & the Environment
  - Remove Sediments With Greatest Potential to Methylate Mercury & Reduce Potential for Further Mercury Methylation in Near-Shore Sediment

  - Reduce Area of Exposure of Ecological Receptors to Elevated Mercury Concentrations in Sediment

SCOPE OF RECENT INVESTIGATORY WORK

- Bathymetry/Side Scan Sonar – Provided Update on Physical Characteristics of River Bed/Lake Bottom and Sediment
- Samples for Grain Size Distribution – Assessed Physical Properties of River Bed Material
- Sediment Samples for Mercury Analysis – Addressed Uncertainty that Historical Data May Not be Representative of Current Conditions
- Sediment Samples for Mercury Analysis – Determine Mercury Concentrations Where the Sediment Surface Changed and Areas with Limited Data (e.g. Lower Ramapo River)
- Samples in ABD Upland Soil Areas to Further Characterize Mercury in Sediment

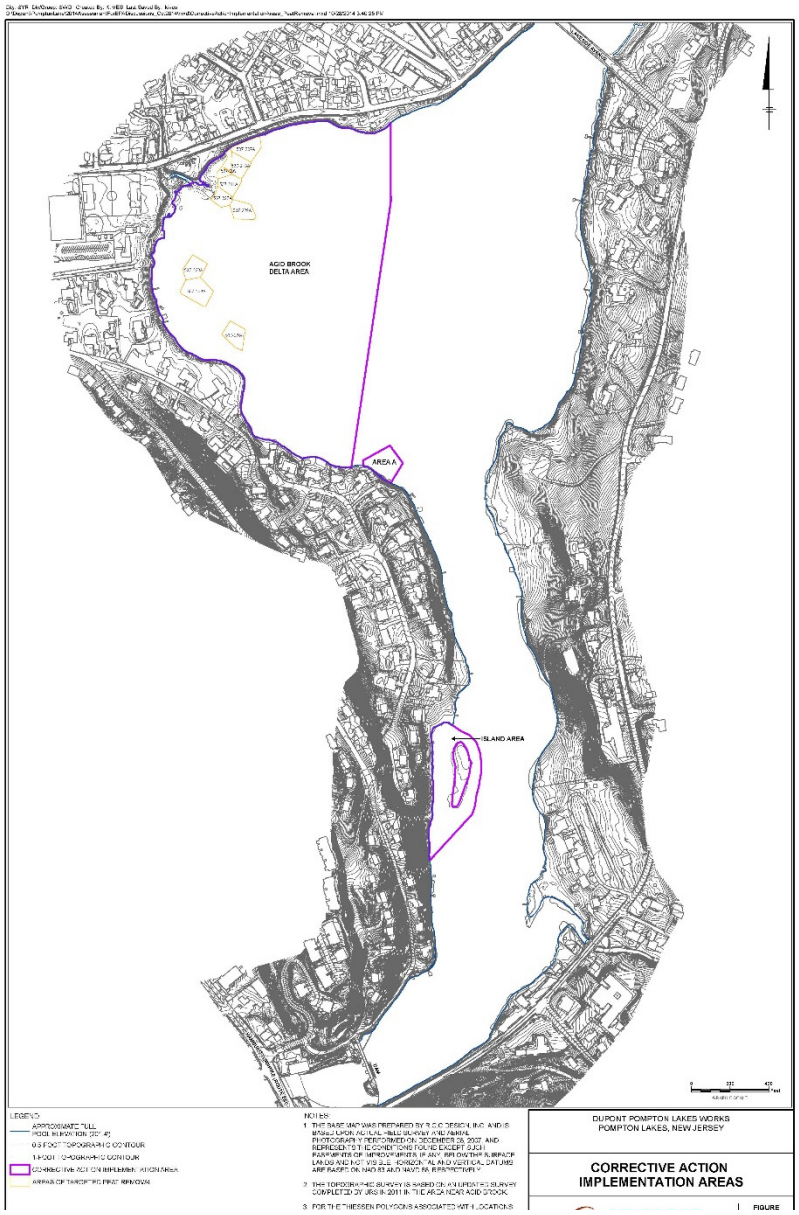
MULTIPLE LINES OF EVIDENCE APPROACH

- Sediment Characterization Sampling/Analysis
- Biota Sampling/Analysis
- Bathymetry/Side-scan Sonar
- Toxicity Testing
- Surface Water Concentrations of Methyl Mercury

REMEDY – ACID BROOK DELTA SEDIMENTS

- Sediment Thickness 0 – 5.2 Feet, But Generally < 2 Feet and Underlain by Peat Layer
- Highest Concentrations of Mercury in Sediment (> 100 mg/kg) Generally Found in Sediment Near ABD Discharge
- Near-shore Sediment Likely Area For Mercury Methylation
- Multiple Lines of Evidence Approach Results in Approximately 36 Acres in ABD to be Dredged Down to Peat Layer
- Dredged Area to be Covered with Minimum of 6 Inches Granular Material to Provide Restorative Layer for Benthic Community to Re-establish

CORRECTIVE ACTION IMPLEMENTATION AREA



REMEDY – ADDITIONAL AREAS IN POMPTON LAKE

- Area A (Approximately 0.5 Acre)
  - Elevated Subsurface Mercury Concentrations in Sediment Relative to Other Areas in Pompton Lake Outside ABD
  - Bathymetric Surveys in 2007/2013 Indicate A Potential Erosional Area During High Flow Events
  - Removal of Sediment Reduces Potential for Future Exposure of Subsurface Materials That May Contain Elevated Mercury Concentrations in a Near-shore Environment Where Methylation Has the Highest Potential to Occur

REMEDY – ADDITIONAL AREAS IN POMPTON LAKE

- Island Area (Approximately 2.5 Acres)
  - Methyl Mercury Concentrations in Sediment/Pore Water/Biota Tissue in Upper Range of Concentrations Measured Outside ABD
  - Near-shore Depositional Sediments With Conditions That May be Favorable to Mercury Methylation
  - Removal of Sediment Reduces Potential for Methyl Mercury Exposure to Fish/Birds That Feed Near the Island

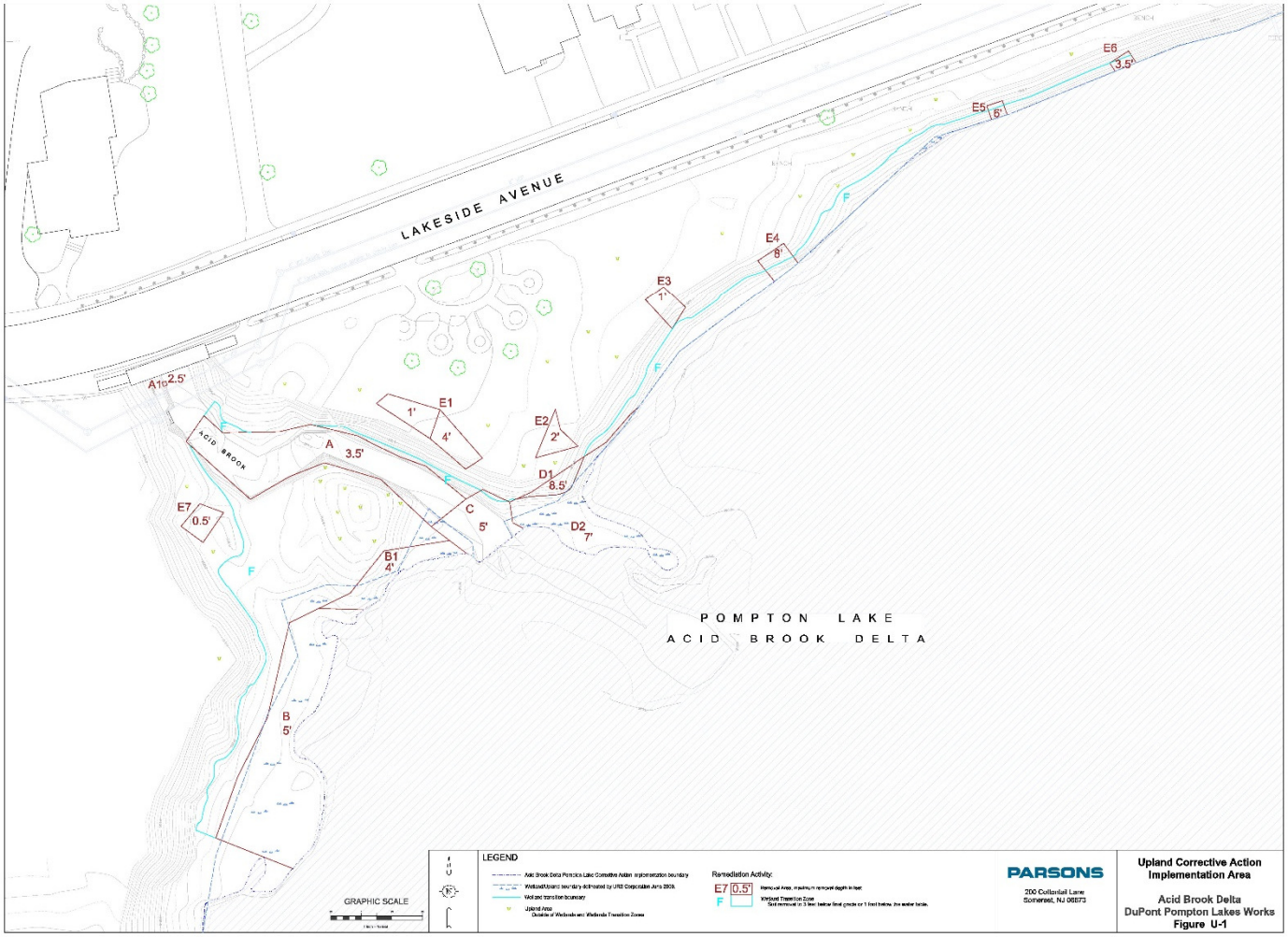
REMEDY – UPLAND SOIL AREAS

- Outside Wetland/Wetland Transition Zone
  - Five Areas (Areas A Thru E) Identified Where Mercury/Lead in Soil Exceed New Jersey Residential Direct Contact Soil Remediation Standards (NJRDCSRS)
  - Excavation/Removal of Impacted Surface Soil to Either NJRDCSRS or Ecological Criteria Whichever is More Stringent
  - Excavation Will be Backfilled With Certified Clean Fill to Provide an Adequate Rooting Zone for Restoration Plantings
  - Approach Allows Protection For Use of Uplands by Humans as Well as Adequate Protection For Ecological Receptors

REMEDY – UPLAND SOIL AREAS

- Within Wetland/Wetland Transition Zone
  - Areas A, B, B1, C, D1, D2, Lower Portions of E4, E5, E6 and F
  - Area F Defined During Additional Investigation Based on Presence of Wetlands/Wetland Transition Areas
  - Excavation to Defined Limits Backfilled With Certified Clean Fill Material (Base Material and Planting Medium) to Facilitate Restoration Plantings
  - Excavation in Wetland/Wetland Transition Zone Plus Installation of a Clean Layer Provides Additional Measure to Support Ecological Protectiveness

ABD UPLAND SOIL REMOVAL AREAS



ADDITIONAL REMEDIAL ELEMENTS PLANNING DOCUMENTS

- Update Corrective Measures Implementation Work Plan (CMI WP)
  - Addresses the Following in ABD:
    - -- Dredging/Removal Methods
    - -- Materials Handling/Transportation
    - -- Final Disposition of Sediment
    - -- Restoration Details
    - -- Health & Safety Plan/Quality Assurance Plan/Reporting

- Remediation & Restoration Plan for ABD Upland Soil Areas
    - -- Part of CMI WP
    - -- Addresses Same Considerations as ABD, Above
    - -- Will Detail Restoration of ABD Upland Soil Areas Including -- Wetland/Wetland Transition Zone

ADDITONAL REMEDIAL ELEMENTS
LONG-TERM MONITORING PLAN

- Evaluates Pompton Lake Study Area (PLSA) Ecosystem As a Result of Post Removal of Mercury Sediments With Greatest Potential for Methylation
- Will Establish Baseline Conditions & Measure Key Indicators of Overall Condition of PLSA Area Over Initial 5-Year Period
- Monitoring Elements Include: Surface Water/Sediment/Sediment Pore Water/Biological Samples (e.g. Insect and Fish Tissue)
- Results of LTMP Will Guide EPA on Needs for Further Monitoring or Additional Remedial Action

ADDITONAL REMEDIAL ELEMENTS
ECOLOGICAL RISK ASSESSMENT

- Info Gathered During LTMP Expected to Allow EPA to Determine if Ecological Risk Assessment (ERA) is Needed
- LTMP Contains Significant Portion of Ecological Elements Needed to Perform an ERA
- ERA Would be Conducted if Determined it Would Inform a Decision About the Need for Additional Remedial Action
- EPA or DuPont (with EPA/NJDEP Oversight and Review) Could Perform ERA if Determined to be Needed

RESULTS OF REMEDY

- Dredging of Approximately 36 Acres in ABD and 3 Acres of Additional Areas Identified in Pompton Lake to Remove Mercury Impacted Sediment
- Removal of Sediment Containing Mercury With Greatest Potential to Methylate and Negatively Impact Human Health and the Environment
- Reduce the Area of Exposure of Ecological Receptors to Elevated Mercury Concentrations in Sediment
- Monitoring PLSA Will Assess Overall Conditions and Determine Need, if any, for Further Action
- Removal/Restoration of ABD Upland Soil Areas Will Ensure Ecological Exposure Pathway is Addressed

NEAR-TERM SCHEDULE

- Public Comment Period: November 3, 2014 - February 2, 2015
- Public Hearing: December 8, 2014
- February/March 2015: Responsiveness Summary/Issue Final Permit
- Spring/Summer 2015: DuPont Prepares Work Plans For EPA & NJDEP Approval/Secures Fed, State, Local Permits/Procures Contractor
- Fall 2015: Initiate Work
- Potential Schedule Constraints Include: Permit Approval/Contractor Procurement

QUESTIONS