Hudson River PCBs Superfund Site
2012 Dredging Season Project Update
January, 2013
Site History

1948-1977
PCBs used by GE capacitor manufacturing plants

1973
Removal of Ft Edward Dam—PCBs spread downstream

1976
New York and GE settle enforcement action for PCB discharges

1984
1st EPA ROD calls for shoreline capping (60 acres) but NO DREDGING

1989-1990
GE implements 1984 Remedy

1990
EPA reassessment begins

2002
2nd EPA ROD calls for dredging ~2.65 million cubic yards

2009
Phase 1 Dredging

2010
Peer-Review Evaluation

2011
Phase 2 Dredging Begins (5-7 years)
Sediment Processing Facility
Size Separation
Phase 1 Overview

- Conducted May - October 2009
  - ~283,000 cubic yards (C.Y.) removed
  - Containing ~20,000 kilograms TPCB
- Dredging completed in Certification Units (CUs) 1 – 8, 17 – 18
- 24-hours a day / 6 days per week
- Up to 12 dredge platforms
  - 19 Barges
  - 21 Tugboats
  - 90+ Vessels
Phase 1 “Lessons Learned”

• Number of challenges identified:
  – Uncertainties in depth of contaminated sediments
  – Woody debris / bedrock / glacial lake clay
  – Delays in unloading material
  – Off-site disposal extended into 2010

• Steps taken:
  – Significant resampling effort (~2,000 cores)
  – Revised dredging approach
    • Reduced number of passes
    • Adjusted method to setting dredge depth following first pass
  – Revised performance standards
    • Limit the extent of capping allowed
  – Equipment modifications at Processing Facility
• Refined Best Management Practices (BMPs)
  – Limiting the number of dredge passes, thereby limiting the number of “bucket bites”
  – Reducing the number of dredge platforms operating simultaneously
  – Stop dredging when clay / bedrock is encountered
  – Controlled bucket decanting
  – Begin placement of backfill material as soon as practicable
  – Limit tug boat propeller “wash”
  – “Proactive” approach to instituting additional BMPs for challenging areas
    • Oil absorbent and containment booms
    • Alternating dredge areas
• Dredging occurred between June 6 to November 8, 2011
  – Delayed start due to elevated river flows in Spring 2011
• Dredging completed in CUs 9 – 16 and 19 – 25
• Backfilling / capping operations completed November 18, 2011
• Removed more than 363,000 C.Y. of sediment from 15 CUs
• Improved compliance with Engineering Performance Standards and Quality of Life Performance Standards
Additional Facility Improvements

Coarse Material Staging Area Expansion Project

Additional Gravity Thickener Construction

Additional Barge Unloading Station Construction
2012 Dredging Summary

- Dredging occurred between May 9 to November 17, 2012
- Dredging completed in CUs 26 – 48
  - Dredging partially complete in CUs 50 – 54 (will resume in 2013)
- Backfilling / capping operations completed December 7, 2012
- Removed more than 663,000 C.Y. of sediment from 23 CUs
- Continued compliance with Engineering Performance Standards and Quality of Life Performance Standards
Productivity Summary

• In 2012 season, more than 663,000 C.Y. of sediment was removed (design target was 350,000 C.Y.)
  – Approx. 26,000 +/- C.Y. dredged per week
  – Dredged approx. 118 acres

• More than 1.3 Million C.Y. of sediment has been removed to-date.
2012 Habitat Reconstruction

- Harvested SAV from NYSCC Feeder Canal
- Planted four CUs from 2011 dredge areas
  - 1.9 acres of SAV; 0.36 acres of RFW
  - Reduced scale / modified approach from 2011
- Plants placed by divers and waders using dive platform with support vessels
- Continued monitoring of plants installed in Phase 1 areas
- 2012 dredge area habitat design underway
Resuspension Summary

- Resuspension:
  - No exceedances of 500 ng/L PCB concentration standard (5 out of 7 day criteria)
    - Single values > 500 ng/L occurred on four separate occasions at Schuylerville (Lock 5)
  - No exceedances of PCB load standard
Water Supply Monitoring

- Routine sampling conducted each month at Albany and Poughkeepsie as part of RAMP
  - Sampling frequency increase to weekly if Waterford results > 350 ng/L (did not occur in 2012)
  - Albany result similar to Waterford (~ 10 miles downriver)
  - Poughkeepsie: ND – 24 ng/L (Avg. Result 13 ng/L)
- Routine sampling also conducted by NYSDOH on raw water at public water supplies (PWS)
  - Green Island
  - Rhinebeck
  - Port Ewen
  - Poughkeepsie
Residual Summary

• 1 ft. backfill layer placed in all areas dredged
• In some locations, capping of river sediments is necessary
• Phase 2 Residual Engineering Performance Standard specifies a limit on the extent of capping that is allowed:
  – Counted Area Capped to Date: 4.90% (11% allowable)
  – Counted Area with “Inventory” Capped to Date: 0.16% (3% allowable)
  – Non-Counted Area Capped to Date: 4.81% (Not Tracked per Residual Standard)
• Minimize capping within the Navigation Channel
  – Some capping of residuals on bedrock areas necessary (27 nodes)
Quality of Life Performance Standards

• Air Quality of Life Performance Standard exceedances:
  – Processing Facility
    40 Air QoL Standard Level Exceedances (approx. 7.2% of samples)
  – Dredge Corridor
    81 Air QoL Standard Level Exceedances (approx. 3.6% of samples)

• Noise, Odor, Light or Navigation QoL
  – No Exceedances
  – Continued outreach to nearby residents
  – Complaints followed-up on by GE and EPA
Processing Summary

• 1,270 barges unloaded
• 86 trains shipped since May 31
  – Shipping began two months earlier than 2011
• All sediments off-site by end of year
• More than 350 million gallons of process water treated
2012 / 2013 Off-Season Activities

• In-river equipment demobilized / secured
• Processing Facility Maintenance
  – Clean and winterize processing equipment
• Update to 2012 project documents, including:
  – Community Health and Safety Plan
  – Remedial Action Work Plan
  – Design documents
2013 Dredging Season

• Adaptive management adjustments based upon “lessons learned” in 2012
• Resume dredging operations in WGIA (CUs 50-54)
• Continue main-stem of the river (CU 49)
  — Design Target for Removal: 350,000 C.Y.
  — Engineering challenges (dams, land-lock, etc.)
• Initiate dredging in River Section 2
  — Additional down river support facilities needed
West Griffin Island Area
Land-Locked Area – Southern Extent
Floodplains RI/FS Update

• Focused on evaluating the extent of PCBs
  – 40 miles of floodplains (Fort Edward to Troy)
  – Over 3,000 properties in 100-year floodplain

• On-going data collection since 2000
  – > 7,000 samples / > 500 unique properties sampled to-date
  – Interaction with property owner/community
  – Obtain property access / extensive coordination required

• Interim Response Actions (>10 ppm)
  – Residential and recreational use areas
  – Covers and signs

• Ongoing “flood mud” sampling (none in 2012 – low flows)

• Remedial Investigation/Feasibility Study
  – Draft RI/FS Work Plan (received May 2012)
  – Initial Floodplain Characterization Report (received June 2012)
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