



# Summary of First Five Year Review for the Hudson River PCBs Superfund Site

June 28, 2012

# Five Year Review

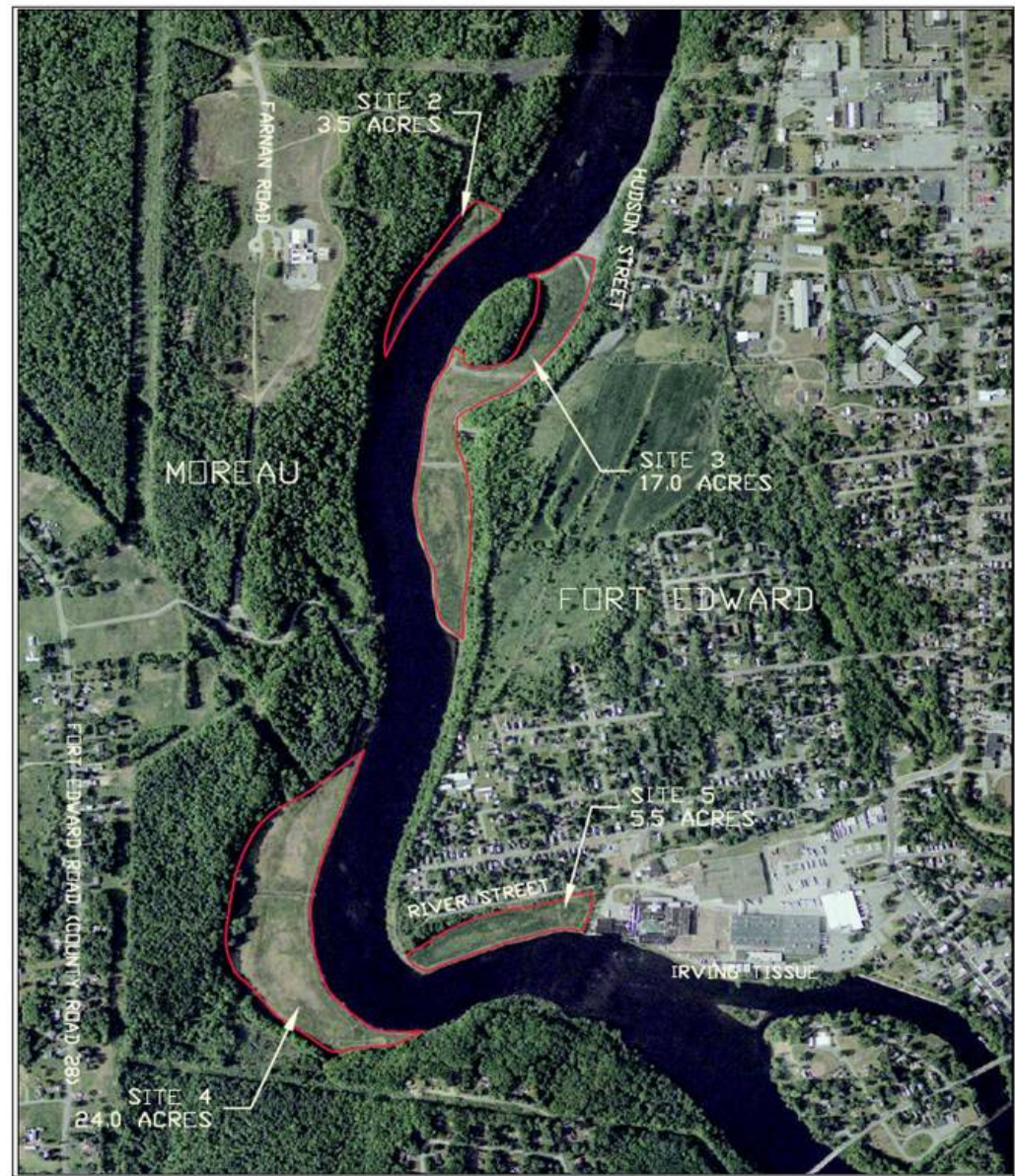


- Statutory requirement
  - River Sediments - start of facility construction
  - Remnant Sites – start with completion of remedy
- Community Outreach – notices, list serv, press release, meetings, review of correspondence etc.
- EPA extended deadline as requested
- Review completed by EPA Hudson River Team, EPA Region 2 staff with EPA Headquarters Review
- Purpose of FYR is remedial action
  - Protective of Human Health and the Environment
  - Functioning as intended
- Project has been under ongoing extensive review

# Five Year Review

## Remnant Deposits

- **1984:** EPA ROD selected in-place containment of remnant deposits.
- **1991:** Construction completed at Remnant Deposits 2, 3, 4, and 5
  - Topsoil/vegetative cover
  - Sand drainage layer
  - Geosynthetic clay liner
  - Sand/fill bedding layer
- Deposit 1 (Island) no longer present



# Five Year Review

## Remnant Deposits



### Question A: Is the remedy functioning as intended by the decision documents?

- Remedy **prevents** the **potential for direct public contact** with PCB-contaminated sediments and the **potential volatilization** of the PCBs.
- **No institutional controls** identified in '84 ROD. Potential future use needs to be limited to uses and activities that would not compromise the integrity of the cap system and will not result in unsafe exposures to contaminants.

### Question B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy still valid?

- **Cap system, fencing, and posted signs prevent exposure**
- **Capping of PCB concentrations >5 ppm** consistent with current risk assessment practices



# Five-Year Review River Sediments



## 2002 ROD: River Sediments

Project has been under ongoing extensive review

FYR summarized:

- Pre-Dredging Phase 1 Activities
- Phase 1
- Phase 1 Peer Review
- Phase 2 Decision
- Phase 2
- Implementation of Institutional Controls

## Data Review Included

- Water Quality Monitoring
- QoLPS
- Fish Monitoring
- River Sediment Evaluation

# Five-Year Review River Sediments



## Question A: Is the remedy functioning as intended by the decision documents?

- Operations **on-going**
- Estimated **5-7 years to complete** dredging in Upper Hudson River
- Remedy is being implemented in accordance with the **2002 ROD**

Key remedial activities discussed and how these activities are meeting the intent of the decision documents:

- River Section 1 Sediments
- Phase 1 and 2 Eng and Q of L Standards
- Deposition Study
- River Sediment Evaluation (SEDC)
- Processing Facility
- Fish Advisories and Other Institutional Controls

# Five-Year Review

## River Sediments



### Question B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy still valid?

The Remedial Action Objectives (RAOs) in 2002 ROD are still valid.

- Reduction in **fish tissue concentrations is closely related to the concentration of PCBs in surface sediments** throughout the Upper Hudson.
- **Reduction will be achieved through sediment removal by dredging and backfilling and MNA.**
- Fish Ingestion
  - Fish ingestion rates, cancer slope factor, and oral Reference Dose used in the **original risk analysis** and also the calculation of risk-based remedial goal have **not changed** since the original risk assessment.
- Ecological Risk
  - **Exposure pathways** and receptors pertaining to the EPA 2000 BERA are **still valid**. New information suggests that protectiveness could be achieved toward the upper ends of these risk ranges.

# River Section 2



## **Higher surface sediment concentrations**

- may take about one half life longer (~10 yrs) to reach remedial goals than that originally forecast

## **Given the following uncertainties for River Section 2**

- long periods already anticipated to achieve the remedial goals
- reduction in surface concentrations over time seen in the River Section 1 Surface Sediment (replicated in River Section 2)
- however potentially better than previously anticipated improvements in River Sections 1 and 3 are expected

## **EPA believes**

- The dredging and MNA remedy will achieve the RAOs and specific fish tissue remediation goal identified in the ROD
- The potential delay to achieve remedial goals in RS 2 is not deemed a sufficient reason to modify the remedial design.
- Potential longer Period of injury to natural resources should be addressed separately



# Remnant Sites and River Sediments



**Question C: Has any new information come to light that could call into question the protectiveness of the remedy?**

**No other information** has come to light that could call into question the protectiveness of the remedies.

## Technical Assessment Summary

- The remedy at the **Remnant Deposit is functioning as intended** by the 1984 ROD.
- Based on data collected and reviewed for the first five-year review and the ongoing site inspections, EPA selected a remedy in the **2002 ROD that is protective of human health and the environment.**
  - Remedy selected is **currently under construction.**
  - **No changes in regulatory statutes** that affect target sediment cleanup levels, and no new pathways for exposure identified.

# Five-Year Review Conclusions



Protectiveness by Operable Unit	
Operable Unit	Protectiveness Determination
Remnant Deposits	Short- term Protective
River Sediments	Will Be Protective
Sitewide	Will Be Protective

## Site-wide Protectiveness Statement

EPA anticipates that once the **institutional control has been implemented at Remnant Sites** and the **dredging and MNA remedy have been completed** for River Sediments, the remedies at the Hudson River PCBs Superfund **Site will be protective of human health and the environment.**

**In the interim, exposure pathways that could result in unacceptable risks are being controlled.**

# Other Considerations



- Floodplains are moving forward separately
- NYSCC sample data from CU-1
- Navigation dredging
- Improve fish advisories outreach
- Adjust dredge prisms based on new core data
- Next review April 2017