Hudson River PCBs Superfund Site

Project Updates

May 26, 2022

Hudson River PCBs SUPERFUND SITE

Hudson River – EPA Updates

- Powerhouse/Allen Mill deconstruction (legal agreement, work plans, schedule)
- Status of the fish and sediment data analysis
- Ongoing Five-Year Review (3rd review) – schedule and next steps
- Lower River – sampling & investigations
- Upper River – long-term monitoring (GE work plans including upcoming Beryllium-7 surface sediment sampling)
- Floodplain Remedial Investigation/Feasibility Study (2021 data collection, Old Champlain Canal sampling, next steps and schedule)
- Other items

Hudson River Superfund Site

EPA Activities

(Conceptual- not to scale)

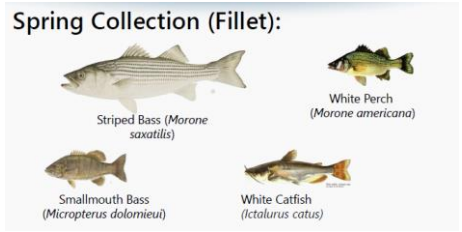
Upper Hudson
(~40 Miles)

Lower Hudson
(~160 Miles)

Remnant Deposits (OU1)
Five-Year Review

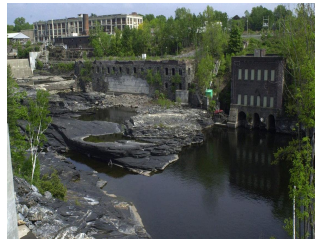
Upper River Remedy (OU2)
Five-Year Review

River Monitoring



Hudson Falls
(GE Plant Site - DEC)

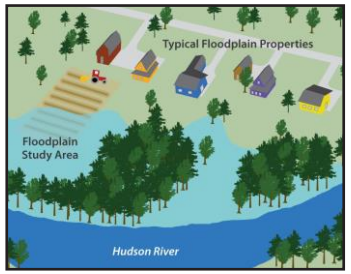
Powerhouse and Allen Mill Deconstruction



Fort Edward
(GE Plant Site - DEC)

Former Fort Edward Dam
Rogers Island

Floodplain RI/FS (OU4)



Schuylerville

Waterline Transfer to Municipalities

Waterford

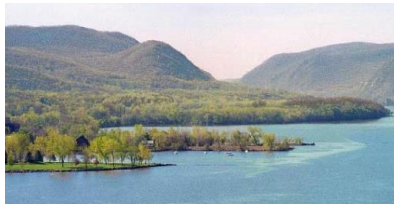
Troy (Dam)

Albany

Lower River Investigations (OU5)

Catskill

PCB Sites (DEC)
- *BASF*
- *Hastings*
- *BIC*



Poughkeepsie
(salt front)

Tappan Zee

George Washington

NJ

New York City Battery

NY Harbor

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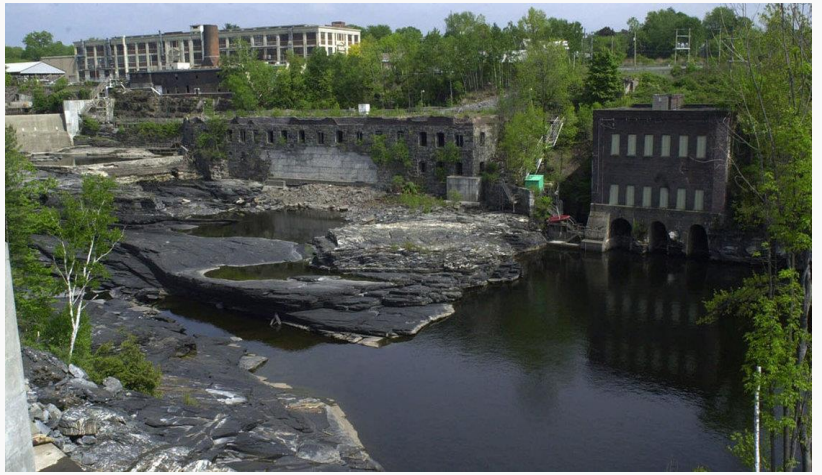
Powerhouse and Allen Mill Deconstruction

- Niagara Mohawk Power Corporation (NMPC) – property owner
- Powerhouse structure is condemned - needs to be deconstructed
  - GE Hudson Falls contamination migrated to the NMPC property
  - Disturbance during deconstruction and/or further building deterioration has potential to cause a release to the river
    - Extensive river monitoring planned
  - GE has conducted additional studies concerning PCBs adjacent to buildings
  - Recently revised deconstruction and monitoring plans - under review by agencies
- EPA is requiring that the removal action activities be done with EPA oversight
  - Parties continue discussions on the legal agreement
  - Monitoring and precautionary planning measures will be required
  - EPA will be the lead agency
    - EPA coordinating with other agencies (DEC, DOH and USACE)
    - Challenging schedule (low flow in river – July to October)
    - Documents to be made available
      - Summary of work
      - Environmental monitoring plan
      - Community air monitoring plan
    - Continue to update CAG on progress of the work



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Former GE Hudson Falls Plant
Allen Mill
Powerhouse
Dam
Hudson River
(low flow condition)

Status of Fish and Sediment Data

- Laboratory data turn-around time delayed due to supply chain and COVID
  - National delays – not specific to Hudson project
- Fish data was prioritized ahead of the sediment data
- Data needs to be carefully reviewed given the complexity of PCB analysis
  - Several steps in the process including the selection of representative samples for congener analysis (5% of fish and 8% of sediment)
- As required, the fish and sediment data are under detailed review by GE and their consultant prior to it being provided to the agencies
- EPA anticipates receiving the data in the near future
- EPA will present the data at the next CAG meeting
  - EPA needs about 6 weeks to review the data and prepare presentation materials

Five-Year Review (FYR) – anticipated timeline

- FYR is underway – public notice issued in April
- 2021 data delay may extend schedule
  - Analysis will be conducted as data is received
- FYR team formation
  - Similar approach to last FYR (3 to 5 meetings - cover data analysis) including agency and CAG participation
- Report - expected in November - December
  - EPA anticipates opportunity for public comment
- Complete FYR - early 2023 (signed final document)

Lower River - Investigations (OU5)

- 160-mile portion of Superfund site
  - 22 miles along west shore in NJ
  - Saltwater front near Poughkeepsie
  - Complex system - tidal estuary
- Literature and data review
  - Very limited data available to evaluate changes over time
  - Current fish data shows slow or no PCB decline moving downstream (some fish recovery in Albany/Troy area)
  - Other contaminants will be evaluated
- Anticipate an agreement with GE to collect additional data
  - Discussions on the agreement continue between EPA and GE

Schedule Overview – preliminary

CONCEPTUAL APPROACH

Beginning 2022

- Water sampling
- Sediment collection – recently deposited (surface) including in tributaries
- Fish sampling – based on availability of species
  - salt and freshwater species
  - migratory, local and forage fish
  - blue crab

2023

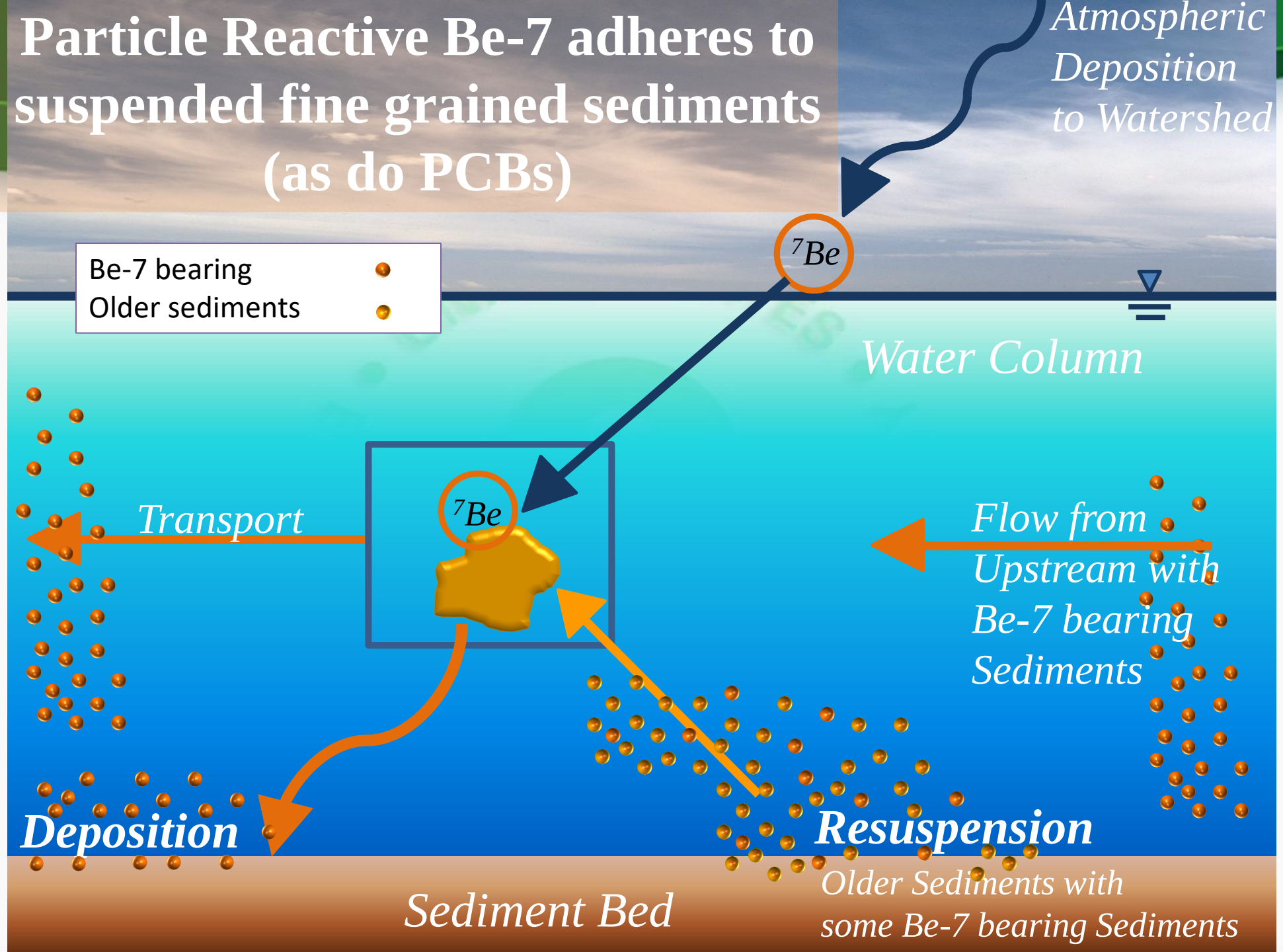
- Sediment collection – area of fish stations (near surface)
- Fish sampling – follow-up round as needed
- Develop scope of work for deeper sediment sampling
- Evaluate water data and need for additional sampling

2023 - 2024

- Sediment collection – cores – deeper samples to evaluate sediment deposition over time (locations will be determined based on all available sediment data)
- Data will inform decision making
- Evaluate data – develop next steps – additional investigations

Beryllium-7 Bearing Sediment

- Purpose: Collect surface sediment samples that represent recently suspended and deposited sediment and analyze for Beryllium-7 (Be-7)
  - Be-7 is an element with a short half-life (53 days) from the atmosphere that mixes into soil and sediment during rainfall events
  - Be-7 can be detected after periods of high rainfall in the spring, and attaches to fine-grained sediments that have been recently resuspended and deposited
  - Be-7 samples allow EPA to measure PCBs in sediments that have been recently suspended, transported, and deposited within the last 6 to 9 months
  - The program supports monitoring the decline of Hudson PCBs over time


Particle Reactive Be-7 adheres to suspended fine grained sediments (as do PCBs)
Atmospheric Deposition to Watershed
Be-7 bearing
Older sediments
^{7}Be
Water Column
Transport
^{7}Be
Flow from Upstream with Be-7 bearing Sediments
Deposition
Resuspension
Older Sediments with some Be-7 bearing Sediments
Sediment Bed

Beryllium-7 Bearing Sediment

Program:

- 90 samples to be collected for Be-7 analysis (30 per River Section)
  - Re-occupying subset of 2021 locations
  - Locations selected in areas anticipated to be depositional
    - Multiple lines of evidence used in sample selection (i.e. field data, river dynamics etc.)
  - Top 2 cm of sediments will be collected
- Be-7 will be measured - but may not be detected in all samples (goal is 50% detection rate)
  - Data will be evaluated and additional analysis of PCBs completed on the top 2 cm samples if needed

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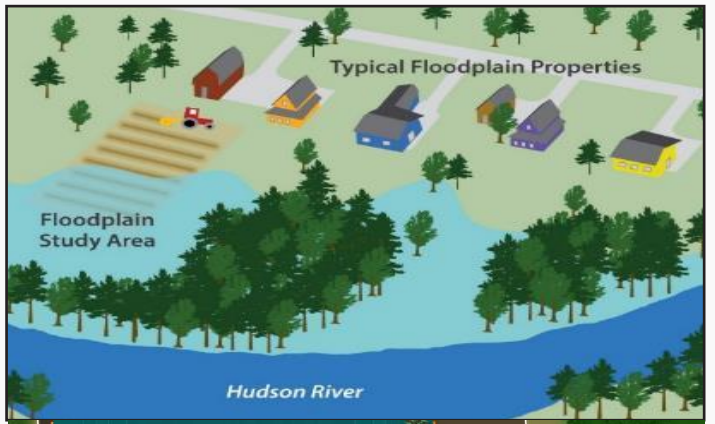
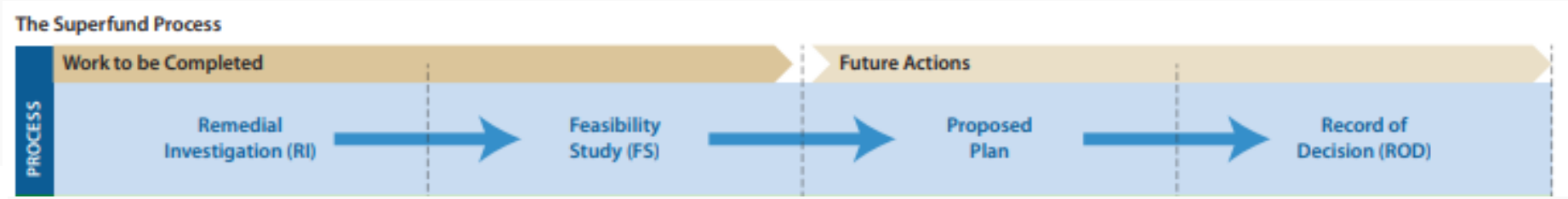
Floodplain Comprehensive Study

- Comprehensive Study – assess the risk PCB contamination poses to human health and the environment
- 43-miles (Hudson Falls to Troy)
  - ~ 5,500 acres (1,800 properties)
  - Sampling – more planned
    - > 10,000 soil/sediment samples
    - Water and some biota (earthworms)
- Logistically challenging – access to properties
  - Close communication with property owners and local officials
- Risk assessment ongoing – initial screening level assessments underway
- Where are the PCBs? - more upstream and closer to the river
- Areas of river bottom exposed when water levels drop are being assessed





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Floodplain Comprehensive Study

- Actions taken to address immediate threats to human health (>10ppm PCBs)
  - Topsoil with grass or gravel covers (50 areas – 2 this season)
  - Signage - along trails and less frequently used areas (26 areas)
  - Areas are inspected and maintained on regular basis
- Ongoing sampling
  - Multiple rounds in past years and more this year
    - Flood mud samples collected to assess impacts from flood events
    - Sampling to better understand spatial distribution and variability of PCBs in soil
    - Human use areas – EPA in collaboration with DEC/DOH continue to identify these areas as property use along the river changes
- Areas regularly used by people have been prioritized for sampling
- Sampling associated with community projects are also prioritized

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Focused Sampling – near river edge

- Some challenges associated with fully understanding PCB distribution near the edge of a river
- Important for risk assessments
- Sampling effort on 11 select properties
  - November 2020 - December 2021
  - Many individual samples collected on each property
- Data under EPA review

Use Area – recent sampling

- Additional frequently used areas within the floodplain were identified for sampling
- Samples collected September – October 2021
  - 29 locations (90 samples)
- Five properties
  - Two residential and three public
- PCB results to be mailed to property owners
- Additional sampling will be conducted as new use areas are identified

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Old Champlain Canal - overview

- Town/Village have long-term recreational and economic development plans for the Old Champlain Canal
- EPA coordinated sediment sampling program with DEC and DOH
- Initial sampling of the Canal was conducted in 2012 and 2017
- Focused sampling was conducted in 2019 and follow-up sampling completed in late 2021
- Total of 43 locations and 68 samples from the canal
- All data analysis is complete
- GE recently provided the data report to EPA and it is under review

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Old Champlain Canal – sample locations

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Next Steps and Other Items

- Five-Year Review – 3rd Five Year Review (Remnant Sites and Upper River Remedy) is underway
  - Follow-up with FYR team
- Lower River - continue discussions with GE (and other parties) for Lower River investigations
  - Support CAG with additional membership/representation
  - More to come on this work!
- Powerhouse/Allen Mill deconstruction – continue discussion with NMPC and GE about the removal agreement and continue document review. Continue to update CAG and make documents available
- Floodplain Comprehensive Study - move forward with risk assessments and conduct further data gap sampling/analysis
  - EPA is continuing to coordinate our efforts (on sample-by-sample basis) with DEC/DOH
- Waterline - transfer of waterline to municipalities
- Habitat - continue close coordination with DEC on habitat surveys and response actions
  - Possible future CAG agenda topic
- Upper River - review and establish long-term monitoring programs
  - Work plan comments are being compiled and will be sent to GE soon

Questions?

Hudson River
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