

# **Second Five-Year Review Report Hudson River PCBs Superfund Site**

## **APPENDIX 12**

### **FIVE-YEAR REVIEW TEAM AND STAKEHOLDER INVOLVEMENT**

Prepared by:  
Ecology & Environment, Inc.

May 2017

**SECOND FIVE YEAR REVIEW REPORT  
HUDSON RIVER PCBs SUPERFUND SITE**

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## **1 FIVE-YEAR REVIEW TEAM AND MEETINGS**

EPA's Comprehensive Five Year Review (FYR) Guidance (USEPA, 2001) states that, for complex projects, a multidisciplinary five year review team of experts may be needed to adequately review the protectiveness of the remedy. Because of the complexity of the Hudson River PCBs Site remediation, the EPA assembled a five-year review (FYR) team of experts and agency representatives from a diverse group of disciplines and perspectives. This appendix describes the formation of the team and the communication carried out throughout the review process.

Upon initiation of the second FYR, the EPA established a team that included representatives of the state agencies, federal agencies, natural resource trustees, Community Advisory Group members, and EPA subject matter experts (see Table 12-1). The team provides input on remedy implementation and performance based on information that includes environmental data and document review. Team members were asked to commit to regularly and actively participate in meetings or conference calls and to identify an alternate representative. During the first meeting, team members provided their availability, preferred days/meeting times, and preferred meeting locations. Where possible, the EPA team scheduled meetings on alternating days and at varying locations to ensure maximum representation. Additionally, in response to team requests and to meet the FYR schedule, meetings, conference calls, and webinars were held more frequently than the initially proposed monthly frequency (see Table 12-2).

## **2 SECOND FIVE-YEAR REVIEW PUBLIC NOTICES**

On March 29, 2016, the U.S. Environmental Protection Agency issued a news release announcing that the agency had begun its second five-year review of the cleanup of the Hudson River PCBs Superfund Site. The news release was distributed to media outlets in the upper and lower Hudson River, elected officials in the project area, and the Hudson River PCBs Site email Listserv, which includes more than 500 subscribers. In addition, three public workshops were held during the FYR, and news advisories were distributed to local media outlets in advance of the workshops.

### **3 SECOND FIVE-YEAR REVIEW CORRESPONDENCE RECEIVED**

While the five-year review was underway, written correspondence on the review was received from NOAA; USFWS; NYSDEC; the New York State Attorney General's Office; Congressional members Nita Lowey; Sean Patrick Maloney; Yvette Clarke; Joseph Crowley; Elliot Engel; Steve Israel; Hakeem Jeffries; Carolyn Maloney; Grace Meng; Jerold Nadler; Kathleen Rice; Jose Serrano; Louise Slaughter; Nydia Velazquez; Chris Gibson, and Paul Tonko, assemblymember Carrie Woerner, Dutchess County Executive Marcus J. Molinaro, Orange County Executive Steven M. Neuhaus, Rockland County Executive Edwin J. Day, Westchester County Executive Robert P. Astorino, as well as Senator Kristen Gillibrand, Scenic Hudson, Sloop Clearwater, Natural Resource Defense Council, and Riverkeeper. All input received was considered during the development of the second five-year review report.

Meeting agendas and summaries are provided as Attachment 12-A. The presentation given by the EPA at the introductory FYR team meeting on June 22, 2016, is Attachment 12-B. The public notices for the FYR and workshops are Attachment 12-C. Attachment 12-D are the correspondence received during the five-year review.

**Table 12-1 2017 Five-Year Review Team Members**

<b>Organization</b>	<b>Name</b>	<b>Title</b>	<b>Alternate</b>
USEPA (US Army Corps)	Gary Klawinski	Project Director	Michael Cheplowitz
	Joe Battipaglia	Project Manager	Jennifer LaPoma
	Larisa Romanowski	Community Involvement Coordinator	David Kluesner
	John Fazzolari	Coordinator (Ecology & Environment, Inc.)	Deepali McCloe
	Jennifer Edwards	EPA Superfund HQ – Five Year Review	Kate Garufi
	Chloe Metz	EPA Region 2 – Five-Year Review Coordinator	-
	Marian Olsen	EPA Region 2 - Human Health Risk	-
	Charles Nace	EPA Region 2 - Ecological Risk	-
	Marc Greenberg	EPA Superfund HQ - Ecological Risk	-
	Doug Fischer	Site Attorney	Tom Lieber
	Louis Berger Group	Technical Support (as needed)	-
	Ecology & Environment	Technical Support (as needed)	-
NYSDEC	Kevin Farrar	Section Chief – Hudson River Team	Dave Tromp or Will Shaw
NYSDOH	Bridget Boyd	Public Health Specialist	Justin Deming
NYS Canal Corporation	James Candiloro	Director of Environmental Affairs	Joe Savoie
National Parks Service	Amy Bracewell	Superintendent: Saratoga National Battlefield	Donna Davies
NOAA	Lisa Rosman	Regional Resource Coordinator	Jay Field or Tom Brosnan
US Fish and Wildlife	Kathryn Jahn	DOI Manager	-
Community Advisory Group	Abigail Jones Althea Mullarkey Julia Stokes Merrilyn Pulver- Moulthrop	Environmental and User Group Environmental and User Group Saratoga County Interests Washington County Interests	Gil Hawkins Manna Jo Greene/Dave Mathis Peter Goutos Chris DeBolt



**Table 12-2 Five-Year Review Team Meetings and Topics**

<b>Date</b>	<b>Meeting Type</b>	<b>Topics Discussed</b>
June 22, 2016	In Person	<ul style="list-style-type: none"><li>• Team roles and responsibilities</li><li>• Status of data and proposed data collection</li></ul>
July 28, 2016	Conference call	<ul style="list-style-type: none"><li>• Human health risk evaluation</li><li>• Water, sediment, fish data sets</li></ul>
August 17, 2016	In Person	<ul style="list-style-type: none"><li>• EPA's perspective on current data</li></ul>
September 8, 2016	Webinar	<ul style="list-style-type: none"><li>• Air monitoring</li><li>• Impacts of implementation on recovery</li></ul>
September 15, 2016	Meeting	<ul style="list-style-type: none"><li>• NOAA perspective on current data</li><li>• Discuss NYSDEC's questions</li></ul>
September 21, 2016	Conference call	<ul style="list-style-type: none"><li>• NYSDEC questions, continued</li></ul>
October 13, 2016	In Person	<ul style="list-style-type: none"><li>• Sediment sampling scope of work</li><li>• Water data</li></ul>
October 18, 2016	Conference call	<ul style="list-style-type: none"><li>• Sediment sampling scope of work</li></ul>
November 9, 2016	In Person	<ul style="list-style-type: none"><li>• Institutional Controls</li><li>• Model forecast and long-term projection considerations</li></ul>
November 30, 2016	In Person Workshop	<ul style="list-style-type: none"><li>• Five Year Review process and current status of review</li><li>• Cleanup objectives of the Hudson River</li><li>• Data and analysis of fish, sediment, and water for the Five Year Review</li></ul>
February 9, 2017	Conference call	<ul style="list-style-type: none"><li>• Discuss recent fish and sediment data that was sent to the team</li><li>• Respond to questions as needed</li></ul>
February 23, 2017	Conference call	<ul style="list-style-type: none"><li>• Discuss recent meeting with Hudson River Foundation</li><li>• Respond to questions as needed</li></ul>

## 4 REFERENCES

USEPA. 2001. *Comprehensive Five-Year Review Guidance*. June 2001.

# **Second Five-Year Review Report Hudson River PCBs Superfund Site**

## **APPENDIX 12**

### **FIVE-YEAR REVIEW TEAM AND STAKEHOLDER INVOLVEMENT**

#### **Attachment 12-A Second Five-Year Review Meeting Agendas and Summaries**

Prepared by:  
Ecology & Environment, Inc.

May 2017

**Five-Year Review (FYR) Team Meeting**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Wednesday June 22, 2016**  
**1:00 PM – 2:30 PM**

**Agenda:**

- I. Five-Year Review team member overview (review member/alternates list)
  - a. Roles and responsibilities (discussion)
- II. Technical topics for discussion at this meeting (presentation)
  - a. 2016 sediment sampling
  - b. Update on ongoing fish and water data collection
- III. Technical topics for future meetings (presentation and discussion)
  - a. NOAA analysis and EPA white paper on river recovery
  - b. NYSDOH fish advisories
  - c. Institutional controls
  - d. Other topics as agreed to at the meeting
- IV. Schedule for future meetings, conference calls, and workshops (discussion)
- V. Schedule for the Five-Year Review and report (presentation/handout)
- VI. Future meetings considerations (discussion)
  - a. Discussion regarding ongoing analysis and making data/information available
  - b. Format for conference calls/meetings workshop
  - c. Setting agenda for future meetings
  - d. Length of meetings would vary based on material to be covered
- VII. Comments and suggestions

**Meeting Summary:** The purpose of the meeting was to discuss the process for completing the second Five-Year Review (FYR) of the Hudson River PCB Dredging Project and how the FYR team would function.

The group discussed expectations with respect to attendance and participation. This included keeping meetings functional, manageable and productive, having one representative from each member agency/group (the Primary or Alternate member). Alternates could attend in place of the Primary members if needed. The anticipation is that primary members (or alternates) would update their

respective agency/group to ensure that all interested parties are apprised of current issues. Depending on agenda, as appropriate, members may request to bring technical support to a specific meeting/call.

The meeting facilitator will prepare a brief meeting summary outlining the general discussion and any action items. Individual members/alternates are responsible for taking their own more detailed notes if desired. The general summary will be circulated following the meeting.

Members noted that in order to effectively contribute to the FYR process, they will need sufficient time to review and digest notes and materials, and if requested, time to prepare information and analyses in advance of FYR meetings. EPA stated that their goal is to allow for appropriate time for review while also respecting the FYR deadline.

An update on the data collection efforts was provided, including proposed sediment sampling and an update on the processing of fish and development of fish data. The team also discussed the approach to assessing the recovery of the river and raised other potential topics for future meetings, including:

- A summary on the protectiveness statements, how they are used, and the guidance on each type of statement,
- A discussion of project closeout (e.g. a summary of the project impacts and performance against the standards) and how that fits into the FYR. EPA agreed to look into this topic and report back to the team,
- An assessment of the Remedial Action Objectives (RAOs) for fish, the actual data, and how that compares to the model assumptions that went into the RAOs,
- A summary of the institutional controls and specifically fish advisories,
- A discussion of air impacts. EPA agreed to look into this and report back to the team, and
- A discussion of the sediment sampling work plan.

A member asked EPA to include an assessment of the impact to the communities to be included. EPA said they would look into this. Questions during the sediment portion of the presentation focused on the timing of the OM&M work plan submittal and field work. The OM&M scope in the 2010 decision documents needs some adjustments based on current comments received but is close. The work plan is in development and sediment sampling is planned for this summer, likely by August.

During the discussion on fish data, EPA agreed to finalize the fish special study for the five-year review. EPA will also reach out to NYSDOH to discuss the current fish advisories. EPA and DEC agreed that angler surveys may not be the most effective tool to collect this type of data. A presentation on lower river fish data would be included in a future meeting.

During the discussion on meeting format, the group discussed meeting frequency, format, and dates. Meetings will be held monthly in different formats: FYR team meetings, team conference calls, or public workshops. Participants requested that dates be set ASAP for future meetings so that people can mark their calendars; topics can be filled in as available. The meeting facilitator will circulate proposed dates for upcoming meetings and calls.

With respect to the FYR report, a member asked whether the Lower River would be included in the OU2 discussion or if it would be discussed separately. This has yet to be determined. The member also

asked if Risk Assessments would be reassessed in detail. The current plan is to review the risk assessment, with more in-depth review if needed.

**Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- The facilitator will propose dates and days of the week for future meetings. It was also suggested that additional check-in calls would be scheduled in between meetings to briefly discuss technical topics.
- EPA will finalize the fish special study report before the FYR is issued.
- EPA will look into the institutional controls. EPA may have to discuss with NYSDOH in order to provide an update.
- EPA will look into the assessment of air impacts.
- EPA will provide a response to the request on the fish RAO reassessment.
- EPA will look into the project closeout and update the group on how closeout fits into the FYR.

**Next meeting date:** Expected August based on team member response.

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Thursday July 28, 2016**  
**1:00 PM – 2:00 PM**

**Agenda:**

- Introductions and call logistics
- FYR evaluations - updates/next steps/schedule
  - EPA plans to discuss evaluations associated with various media (soil, sediment, water, fish etc.) and other activities necessary for FYR
- Upcoming five-year review meetings
  - August – Meeting – Proposed for Wed August 17<sup>th</sup> 1:30 – 3:30
  - September – Workshop (Date TBD)
  - October – Meeting (Date TBD)
- Questions, comments and suggestions

**Meeting Summary:** The call was held at the request of the review team to check in on the status of the review and understand the data to be reviewed.

EPA discussed the considerations for the soil, water, and sediment data that will be used in the five-year review, including a discussion on data that will be collected in 2016. Water data collection is ongoing and will continue leading up to the five-year review report. Fish data will continue to be collected; 2015 fish are being processed and 2016 spring fish will be processed after the SOPs have been finalized. The 2016 fall fish are not expected to be analyzed in time to be included in the analysis for this five-year review. Sediment will likely be collected this summer/fall. A team member asked about the timing of the work plan for the sediment data collection. EPA said that comments are being assembled on the draft and the Agency expects that the work plan will be finalized in time for sediment collection to occur later in the summer or fall. Members asked questions about the specific data to be used in the evaluations. NYSDEC stated that they have a list of questions that cover this topic and would like to send that to EPA for consideration.

EPA discussed the review of the risk assessments (both HHRA and ERA). EPA's risk experts will be engaged to assist in these assessments. Team members asked if recent changes in the IARC classification for PCBs would be factored into the review. EPA stated that the Integrated Risk Information System (IRIS) would be the source of information for the review and these values have not changed. Members asked for an update on the timeline for changes to IRIS at a future meeting.

EPA responded to a question from a previous meeting concerning the community impacts for those on the river and how that would be considered in the five-year review. EPA stated that although community impacts are not part of the scope for a five-year review, a dialogue on this topic could be

beneficial for future floodplain work and other Superfund projects. EPA agreed to refer this topic to the project's CAG facilitator for potential discussion at a future CAG meeting.

EPA also stated that they are reaching out to NYSDOH concerning the NYSDOH fish advisories and the NYSDOH's [Hudson River Fish Advisory Outreach Project](#). An update would be given at a future meeting. EPA also stated that they expected the next few meeting to focus exclusively on technical topics.

The team discussed future meeting format, location, and dates. Team members expressed interest in holding at least one meeting in the lower river area. Feedback about a potential public workshop included the suggestion that the workshop be held later in the fall, after the technical meetings are complete. EPA stated that the next in-person meeting would be held on August 17<sup>th</sup>. September dates (likely the 21<sup>st</sup> or 22<sup>nd</sup>) would be set soon and invites sent out. An October meeting date would also be set that would be scheduled for a different week than the CAG meeting.

#### **Follow-up Items:**

The following items were noted during the meeting for follow-up.

- EPA agreed to share the sediment sampling work plan with the group prior to the sampling event.
- NYSDEC will share their list of questions for EPA and EPA will share these comments with the team.
- EPA will coordinate with the Hudson River Foundation concerning a data request on load to the lower river. EPA to send same data sets to Scenic Hudson and their consultant.
- EPA to provide follow-up at a future meeting concerning the timeline for changes to toxicity data and EPA's use of the IRIS database.
- Coordinator to raise the topic of community impacts from the dredging project, including the implementation of the Quality of Life Performance Standards, for consideration at a future CAG meeting.
- Technical meetings to be held in the coming months to discuss the evaluations in the five-year review in more detail. The public workshop will be held at a later date as a high-level overview of the five-year process and summary of progress on the review..
- EPA to hold meetings with NYSDOH to discuss the NYSDOH fish advisories and outreach program
- EPA to send five-year template to member(s) who requested it.
- EPA to distribute five-year review guidance to member(s) who requested it.

**Next meeting date:** Expected August 17<sup>th</sup>. Time and location TBD.



**Five-Year Review (FYR) Team Meeting**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Wednesday August 17, 2016**  
**1:00 PM – 4:00 PM**

**Agenda:**

- I. Introductions
- II. EPA – Status of Data Review/Technical Assessment for Water, Sediment and Fish  
(Presentation)
- III. EPA – As follow up to question regarding air data – Summary of Project Air Data  
(Presentation)
- IV. EPA – (if time is available) - Discussion of project Implement (comparison of anticipated vs actual)
- V. Questions/Comments/Suggestions
- VI. Meeting wrap-up
  - Distribution of meeting summaries, sharing of presented information
  - Items that require follow up
  - Future topics
  - Meeting schedule

**Meeting Summary:** The purpose of the meeting was to discuss EPA's understanding of the data that will be used in the analyses for the Five-Year Review (FYR).

A member of the group requested that meeting materials be distributed earlier for review and to allow time for the development of questions. EPA stated that they would attempt to accommodate the request in the future, depending on time and availability.

EPA and the meeting facilitator discussed the anticipated length of the discussion for the agenda topics and asked the group to anticipate a long meeting. They also discussed the potential for some topics to be moved to another meeting or call. The NYSDEC list of questions that was sent to the group was designated as a discussion topic for a separate meeting.

Questions during the introduction/background portion of the presentation concerned the ability of EPA and their contractors to define the function of the remedy. EPA clarified that post remediation fish data is needed to directly evaluate the remedy in terms of fish recovery. EPA further explained that it is important that all available data be used to evaluate the remedy and complete the FYR.

During the portion of the presentation discussing sediment model forecasts, the group had questions about how PCBs decay in sediment. A group member requested that the details of EPA's analysis of Tri+

PCB conversions for fish tissue at low concentrations be provided and EPA agreed to do that when the analysis was further along.

During the portion of the presentation that summarized EPA's current understanding of the available data, the group discussed the trends in fish and water data, and the potential for impacts due to past changes in the fish fillet and processing procedures.

The group discussed whether the other scheduled presentations would be included in the next meeting and rescheduled the presentations for a conference call with a WebEx, to be hosted from the field office. The purpose of the next in-person meeting (in September) would be to answer the NYSDEC's questions about the FYR.

**Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- Group members asked for presenters to try to share their presentation materials ahead of the meeting to allow members to prepare questions and thoughts.
- A member of the group requested that the June meeting summary be revised. A request was made during the June meeting that a report of dredging impacts to the surrounding communities be included in the 2017 FYR. During the July meeting, EPA stated that this request could not be accommodated because it is outside of the scope of the FYR, but that the topic could be suggested for a future CAG meeting. The group member requested that the answer to the request be included in the June meeting summary. EPA agreed to revise the June meeting summary.
- EPA agreed to provide their analysis of Tri+ PCB conversions for fish tissue at low concentrations to the group when the analysis was further along.

**Next meeting date:** September 8 for conference call/WebEx, September 15 for next in-person meeting.

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Thursday September 8, 2016**  
**1:00 PM – 2:00 PM**

**Agenda:** Discuss the two presentations (air data review and project implementation) that were not covered during the August 17 meeting

**Meeting Summary:** The purpose of the meeting was to go over the two presentations that were not covered during the last Five-Year Review (FYR) Team meeting. These presentations provided a summary of project air data and a summary of the method of implementation.

The facilitator discussed with the group that NOAA had requested 30 minutes to present some issues at the next in-person meeting (September 15). The group agreed that NOAA information would be presented at the beginning of the meeting to allow time for discussion of this topic.

During the “Considerations” portion of the Air Quality presentation, the group discussed the meaning of the discussion of air exposure during the Human Health Risk Assessment (HHRA) and whether the assessment based on old data would continue for the 2017 FYR. Members of the group asked if there would be a new risk assessment. This discussion included the paper from the International Agency for Research on Cancer (IARC) concerning the toxicity of PCBs. EPA clarified that the Integrated Risk Information System (IRIS) would be used during the FYR assessment of risk values. EPA did state that the non-cancer risk values for PCBs are being evaluated, but it is likely that the evaluation would not be completed for several years and therefore not available for this FYR. EPA also discussed new values with the group (such as default body weight) and the potential for a new non-cancer slope factor. A comment was also made that some members of the group observe a tendency toward minimization on behalf of EPA, and expressed concern that EPA takes so much time to change IRIS and other values.

Discussion of the impact of the implementation of the project on the assumptions from the ROD occurred during the implementation presentation. This team also discussed how the changes to the project will likely have an impact on the number of years expected to achieve the targets and goals for fish. The group also discussed how changes in fish concentrations take time after the completion of dredging.

The group discussed the meetings in October and the workshop scheduled to be held down-river in October. NYS asked if EPA would be providing information to the public that would prepare them to be able to review the FYR report and comment during the public comment period. The group asked EPA to outline any limitations to guide the information that the group can provide to EPA to assist in their analysis. EPA answered that any information is helpful, but that this could be further discussed during the presentation on New York State’s questions at the next meeting.

The group asked if any air data was available from the Lower Hudson River (LHR), and EPA and the State were unsure if any such data existed. Both agencies said that they would check. EPA indicated that this data would be reviewed as part of the FYR.

A member of the group also asked where to find a list of assumptions that were used for the human health risk assessment, to assist in answering question B. EPA responded that this would be provided at the next meeting.

**Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- A member of the group requested that a footnote be added to the report to discuss the year of the risk evaluation and the values in the evaluation.
- EPA and New York State agreed to check if any air data is available from the LHR.
- EPA agreed to provide a discussion of the assumptions from the ROD and HHRA in the presentations for the next meeting.

**Next meeting date:** September 15 for next in-person meeting.

**Five-Year Review (FYR) Team Meeting**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Thursday September 15, 2016**  
**10:00 AM – 12:00 PM, 1:00 PM – 3:00 PM**

**Agenda:**

- **Discuss NOAA perspectives on the use of available data to evaluate the remedy**
- **Discuss the questions previously submitted by NYSDEC (attached)**

**Meeting Summary:** The purpose of the meeting was to allow NOAA to present some recommendations on the use of the existing project data, and to go through the questions submitted by New York State Department of Environmental Conservation (NYSDEC).

The facilitator discussed with the group that NOAA had requested 30 minutes to present some issues at this meeting, and that EPA wanted to provide as much time as NOAA needed to cover their topics and allow time for discussion. Then, the questions submitted by NYSDEC would be covered as time was available.

During the discussion on PCB loads to the lower river, the group discussed the purpose and outcomes of the March or May analyses of load. EPA's contractor's mentioned that the March analysis was a preliminary analysis, and that the May analysis did not show that load was significantly higher than predicted prior to dredging. A member of the group asked about the major source control at the site and NYSDEC responded. The group discussed the period of major source control and its effect on the determination of the "MNA period" for assessing model predictions.

EPA discussed the response to their white paper, and mentioned that the agency had received no comments or questions on the white paper in response to NOAA's publication. A comment was made that the NOAA analysis was published in a peer-reviewed journal and that the EPA paper has not. EPA mentioned that the response to NOAA's analysis was developed in a very short time while NOAA's analysis was completed over many years. The group also mentioned that the data that EPA brought up had been discussed at length in the past, and that the group had known some of the responses since early in the project. NYSDEC strongly objected to allowing more time for NOAA to present and the group to discuss topics that were contained in NOAA analysis and EPA white paper. EPA disagreed with NYSDEC and allowed NOAA as much time as needed to present and for the discussion to continue. One member of the group indicated the discussion of NOAA analysis and EPA response was important to the project.

EPA, NOAA, and the New York State Department of Environmental Conservation (NYSDEC) had a discussion about how EPA and NOAA's differences in the agencies' approaches to the analyses pertained to the goal of answering the questions brought up in the Five-Year Review. Team members discussed the need to get through the discussion and clarified the need for the analyses in the report.

EPA discussed load reduction, the ability to track sediment changes over time, and gaps in data needed to assess the questions for the FYR since the dredging had just wrapped up and the limited amount of data that shows post-dredge conditions. EPA stated that 5-8 years of fish data would be necessary to

track trends post-dredging. A team member mentioned that waiting five years for new data would impact the river.

EPA and their contractors discussed the homolog corrections used in their data analysis with the team. NYSDEC requested the data, with the homolog corrections, and EPA agreed to provide the information to the group.

At this point, the group broke for lunch from noon to one PM.

EPA's contractors and NOAA discussed the differences between their interpretations of the model results and the emulation. EPA and NOAA discussed how EPA was addressing the fish processing concerns in fish and the "box" of uncertainty around fish data collected during the remedy. EPA then discussed their opinion on NOAA's discussion of surface sediment data versus removal of more mass. NOAA asked if EPA would be calculating approximate mass remaining in the river sediments, and EPA said that they were considering that analysis. A team member asked if any new data was available to determine additional PCB mass remaining as depth outside of the dredge prisms, and NYSDEC responded that SEDC program data showed that.

A team member asked if sediment sampling would be done in three areas, inside and outside dredge areas and within the "136 acres." EPA responded that both areas in and out of dredge areas would be sampled into the future. The group indicated EPA should have the shapefiles of the "136 acres". NYSDEC then wanted to state that their position that there is nothing special about the "136 acres" and that there is no guarantee that addressing those areas in particular would improve the recovery of the river.

The team requested that then EPA move on to answering the questions provided to the team by NYSDEC. NYSDEC and EPA discussed their interpretations of "operating remedial action," and NYSDEC requested that if EPA's view on the status of the remedy changed, that it be conveyed to the group.

EPA discussed all data that would be used to determine the answer to Question A for the Five Year Review, and the team discussed the data that was available. The team discussed whether the 2016 or 2017 fish data would be considered "post-dredging" fish. EPA asked what other data might be available from New York State, and NYSDEC responded that they were having lab issues for fish but were trying to put together a database as fast as possible. EPA requested that NYSDEC prioritize getting that data to EPA for the Five-Year Review.

NOAA asked if any groups have asked for a special permit for fish collection, and NYSDEC said that they would follow-up on this.

NYSDEC and EPA discussed how EPA is determining the function of the Institutional Controls. The representative from NYS Attorney General's office stated that it is their position that they would like EPA to perform a fish consumption survey. Many team members stated that they agreed with this position, due to other small surveys and information from the team groups. USFWS suggested that if data from a survey was changed from the risk assumptions, that they would be requesting a new HHRA.

The presentation moved on to Question B. EPA and a team member discussed updating IRIS risk values. The group then discussed how cleanup levels and toxicity values would be evaluated. The team asked EPA how the review for Question B would be performed. EPA described the general process but also

stated that they would be looking at analyses from other projects (such as Grasse River) for analyses of toxicity values.

The presentation continued to Question C. The team discussed issues that could be raised for Question C, including the flooding of 2011 and climate change impacts (increase of flood events, biota present in ecosystem).

EPA suggested a call to finish questions on September 21. A team member asked for a description of the public workshop meeting to put out to some of their groups, and EPA agreed.

A team member requested a microphone for participants in the room so that those on the phone can hear the questions from the room.

**Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- EPA agreed to provide the trustees with a spreadsheet with homolog corrections from its consultants.
- EPA agreed to provide Peter DeFur with the SEDC database.
- NYSDEC agreed to check with special permitting about any fish collection permits issued recently.
- EPA agreed to provide a description of the public workshop.

**Next meeting date:** September 21 for next call-in meeting.

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Wednesday September 21, 2016**  
**10:00 AM – 12:00 PM**

**Agenda:** The purpose of the call was to finish going through the questions submitted by New York State Department of Environmental Conservation (NYSDEC).

**Meeting Summary:**

USFW wanted to discuss Question B rather than moving on to Question C. EPA requested that the team move ahead with the presentation where we left off at previous meeting. USFWS asked what data will be gathered and used for Question B and asked NYSDEC if their question had been answered. EPA recapped the discussion on Question B from the team meeting, and NYSDEC agreed with the recap. USFWS asked if this review of exposure assumptions would be done in approximately a month and if it would be communicated back to the group, and brought up climate change. EPA discussed the risks that still exist and EPA was continuing to evaluate, as well as looking at their potential guidance regarding climate change.

EPA stated that a site-wide protectiveness statement is anticipated to be used for the Hudson River FYR. NYSDEC and some team members asked if EPA might include a specific statement for the Lower Hudson. A team member stated that if the Lower Hudson River (LHR) is not protected by the site-wide goals, that EPA should consider a specific statement for the LHR. EPA stated that the statement would be site-wide including the LHR, not expecting to include a specific statement for the LHR.

EPA stated that both OU 1 and OU 2 would be considered at the same stage of completion, construction work completed but not Certified, but did not think that this was relevant to the FYR. The team discussed additional data about OU 1 (Remnant Sites), including potential Floodplains Data and NYSDEC bio data related to Outfall 004. NOAA stated that the most recent bio data for OU 1 was from 2004-2005, and that it would be prudent to collect new data. EPA noted that identifying ownership of remnant site land is primary factor in addressing the long term protectiveness and was not likely to be resolved for this FYR.

In response to NYSDEC's question about the relationship between the FYR and Certification for OU2, EPA stated that the FYR would be complete in April of 2017, and that Certification of the RA is not expected until later in 2017 after habitat final inspection was completed, form packages were signed, and the facility was decommissioned. Then GE could issue their report and EPA has a year to review that report.

EPA, NYSDEC and the NYS Attorney General (AG) office discussed the fish advisories. The AG representative suggested comparing a new survey of fish consumption versus the survey from the late 1990's. NOAA asked how EPA is handling Institutional Controls (ICs) at other sites, and EPA stated that they were looking at other sites. USFWS stated that fish consumption rates were used in the assumptions for the remedy, and EPA stated that they had not found additional consumption rate studies. NOAA asked about subsistence fishing populations and whether they were included with the initial assumptions, and how they would be handled now. The AG office representative stated that



things have changed and that new data would need to be evaluated. NOAA asked if there would be data to be collected for a future FYR if data could not be collected for the 2017 FYR. EPA stated that they didn't see the need for such a study at this time as they were unsure how it would change the risk evaluation. NOAA asked how "effectiveness" of the ICs is defined. EPA indicated that effectiveness of the ICs was generally being compared to the assumptions in the decision documents.

A team member asked if there is a process of keeping track of comments and follow-up. EPA responded that they were committed to sharing general summaries, but requested that the team depend on their own notes for specifics.

The facilitator stated that the next meeting would be on October 13 down river in Hyde Park, with a technical session in the early afternoon and a public workshop later. The facilitator discussed that the public session would be a big-picture overview of the discussions that the team has had to date and what is coming next. The agenda would be expected during the week of September 26.

NOAA requested when the OM&M scope and schedule would be shared. EPA responded that GE would be on the river in October, and would provide a work plan. NOAA stated that they thought they could comment on the scope of work before the work plan. EPA stated that they would send the scope for a quick turnaround on comments.

**Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- EPA agreed to provide NOAA with the scope of work for OM&M Sediment sampling.

**Next meeting date:** October 13 for next in-person meeting and public workshop.

**Five-Year Review (FYR) Team Meeting**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hyde Park, NY**  
**Wednesday October 13, 2016**  
**Technical Team Meeting 1 PM – 3 PM**

The following notes summarize discussion points from the Environmental Protection Agency's (EPA) five-year review team meeting on October 13, 2016 for the Hudson River PCBs Superfund site.

**Agenda:**

- Introductions and meeting logistics
- Discussion of recent water column data
- Proposed approach for 2016 surface sediment sampling
- Discussion of model predictions and long-term forecast considerations (as time allows)
- Institutional controls - fish advisories (as time allows)
- Wrap up (including review of follow-up items)

**Discussion on Water**

During the meeting, a question was brought up regarding the monitoring of the lower Hudson River and a concern about geography of the Hudson River. USEPA stated that the data shown does not reflect the monitoring of PCBs loads to the lower Hudson River. However, USEPA is working on PCB load calculations and that will be discussed at a future meeting, but for the meeting today, concentration and station will be discussed.

A five year team member asked if the USEPA is entertaining changing the program under OM&M. USEPA said that for water monitoring, the OM&M scope will currently remain the same. For sediment, the 2010 OM&M planned scope is the starting point and the technical rational for what else the USEPA may need is being evaluated. Initial 2017 activities will be used to fine tune what will be needed. NYSDEC has already provided EPA comments on the OM&M and they recommended spatial resolution be modified to pool by pool, local fish. NYSDEC would like pool by pool for fish, water, and sediment which will increase spatial resolution.

EPA indicated that the recent water data showed continued reductions post dredging. USFWS questioned why EPA was discussing the recently received water data. EPA commented that the water data was encouraging regarding recovery but cautioned that much more data is needed. EPA also indicated that it was new data and that EPA wants to present and consider all data as part of the FYR.

During the presentation on water concentrations, a question was raised regarding the spike in PCB concentration at the Thompson Island Dam (TID) location during the fall sampling. The TID data was just received and therefore USEPA has had no time to vet the spike before the meeting. USEPA did notice this spike and is investigating if the value is an accurate (real) data point or an analytical analysis error. Historically from time to time in the fall, the Hudson River has higher than normal PCB concentrations. The elevated levels of PCB concentrations are short term and go back to typical levels.

A team member asked if the USEPA has set a target goal for water. USEPA responded that no target for water has been established.

A team member inquired about Mohawk River data and USEPA's response was that they have data up to 2008 and any additional data will need to be obtained from the USGS.

Water data and information presented during the meeting was questioned regarding:

- How it fits into protectiveness?
- How does it fit into showing that remedy is protective?
- What's USEPA's evaluation of protectiveness?

The USEPA responded with the following:

- This is about information sharing at this time and load calculations have not yet been done.
- The data and information fits into protectiveness because PCB concentrations are lower which is encouraging but more data will be needed to determine long term effectiveness.
- Loads are directly related with the determination that will be made. This analysis is still a work in progress.

By comparing the projected concentration and the concentration at this point in time, it will be possible to determine if the river is at or near projections. Keep in mind the Hudson River may still be in an equilibrium period after the dredging.

A request was made for the USEPA to compare the data to projections.

### **Discussion on Sediment**

A team member wanted to know if some areas that are inappropriate for sediment sampling due to substrate have been excluded from the Sediment Sampling Plan. USEPA stated that some areas have been excluded such as bedrock and some river areas that are unsafe to go (near dams). USEPA plans to discuss with NYSDEC how to handle excluded areas. The USEPA will evaluate this data in a host of different ways. The evaluation will amount to a careful description of what is being estimated and then what data would go into that evaluation. As for moving sample locations around, the locations don't have to be the same each time but having the same locations would improve the statistical power of the analysis. The advantage of unbiased design is that we can start from scratch and have comparable numbers, spatially balanced and statistical robustness. In addition, sampling will be conducted to look at sediment deposition to get a handle on how things are changing at the sediment surface. In the FYR, USEPA will incorporate surface level data gathered in 2016 into the analysis to evaluate the concentrations and see how they compare with what is expect/projected on the river bottom.

Follow up:

- USEPA to provide analyses on load and PCB inventory in sediment at a future date.

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Tuesday October 18, 2016**  
**1:00 PM – 2:00 PM**

**Agenda:** The purpose of the call was to allow full discussion of the sediment sampling program and to discuss comments from NYSDEC on the program.

**Meeting Summary:**

NYSDEC expressed concerns over the spatial and temporal resolution of the sampling program. NYSDEC stated that statistical analyses should be done on a pool-by-pool basis, as opposed to analyzing by river section. They speculated that how fish and sediments concentrations are related are different than known at time of the remedy. They further indicated the fish are exposed to sediments on a pool-by-pool basis, and the monitoring should reflect that.

Members also stated that the program should include fine grained soils, should also collect samples adjacent to the dredge areas, and should collect samples at depth as well as surface grabs. EPA responded that the objective of the program is to track surface sediments over time, not to compare to previous sampling events or to identify potential areas of higher concentration sediment. The sampling event will be “year zero” of an ongoing program. EPA also stated that grain size is relatively easy to determine during sampling by trained staff but some grain size analysis will be done.

There was a discussion about the inclusion of this data into the five-year review. EPA stated that, although this data is not needed to conduct the five-year review, the data will be available to the team for consideration.

There was a discussion on the timeliness of the work plan and the ability of the sampling team to complete the sample collection before the end of the year. A second crew may be utilized if necessary. The crews are prioritizing the sampling effort to first collect samples in areas where lockages are required, which would be problematic when the locks close in November. Some samples (those inside the dredge areas) may be completed in 2017. EPA already has data from these areas taken after backfill, so we have some knowledge of the concentrations in these areas already. Members expressed concern over the time that was taken to complete the work plan. EPA stated that the monitoring wasn't required by the consent agreement until 2017, but EPA pushed to move the sediment sampling up to start the clock as soon as possible. The water and fish monitoring will continue as baseline programs and transition to OM&M in early 2017.

Members questioned the precision goals and whether they could be met. EPA agreed that timing is an important question and we will be able to combine data from fall to spring since the time between events is relatively small.

Members stated that the sample size is too small, more data is needed to assess sediment adjacent to dredge areas. EPA stated that although we won't be able to assess individual dredge areas, we can assess the area as a whole by river section. EPA also stated that we would be able to determine the

average level of contamination fish would encounter in each river section and data will be collected in each pool.

Members stated that the program needed to have enough statistical power in each pool to determine the need for additional remediation. EPA stated that they understood the point being made by NYSDEC and others but disagreed that that level of effort was needed to meet the project objective.

**Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- EPA agreed to update the team on the progress of the sampling program and if a second crew would be needed.

**Next meeting date:** November 30 for the public workshop

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Hudson River Office, Albany, NY**  
**Wednesday November 9, 2016**  
**10:00 AM – 12:00 PM**

**Agenda:** The purpose of the call was to finish going through the topics from the previous meeting; Institutional Controls and Model Forecast considerations.

**Meeting Summary:**

**Discussion on Institutional Controls**

A member of the group requested a response to the Operations, Maintenance and Monitoring (OM&M) sediment work plan comments from the state. EPA stated that they were going forward with the sampling as written in the work plan, and that both agencies (EPA and NYSDEC) had discussed their positions. EPA clarified that they were sampling river pools but not sampling at the frequency requested by the state. Members of the group requested written responses to the state's requests. EPA indicated they would be responding to NYSDEC.

The group discussed the institutional control (IC) challenges at the remnant sites, also known as OU 1. The 2012 FYR stated that ownership of the properties would have to be determined to implement ICs at the remnant sites, and group discussed how these ICs would be implemented and possible future uses of the sites.

The group discussed how EPA would be evaluating the fishing restriction and regulation ICs. Members of the group asked how the ICs could be considered effective if people were eating the fish and therefore unacceptable exposures were occurring, and asked whether surveys would be undertaken to determine the amount of exposure. Some group members expressed frustration with EPA, saying that they had not addressed the group's concerns about the remedy and implementation of ICs. EPA stated that the decision documents acknowledge that people are eating the fish, and recommended continued use of the ICs to control exposures. EPA further stated that they read and consider all comments, but need to consider the technical reasons for making decisions. Some mentioned small surveys done on the river and asked about whether a new survey would be undertaken for the FYR. EPA stated that the results of a full survey could take years, and many in the group discussed the time needed. EPA reminded the group that many contaminated sediment sites require and rely on ICs as part of the remedy. Sediment sites have unique challenges in that regard.

A group member asked if 2016 was "year one" of post-dredge fish collection, and EPA stated that 2017 would be the first year.

Another group member asked what data would be used for the evaluation of the fishing advisories and regulations. EPA stated that they would rely on New York State Department of Health (NYSDOH) recommendation and advice. The group member stated that based on the fact that people are eating the fish, the advisories and regulations are not effective.

A group member mentioned that the best way to characterize the site would be to ask and answer two questions: (1) are the controls in place? and (2) are unacceptable exposures occurring? EPA clarified that the remedy is being implemented, and that the remedy expected some exposures would occur during implementation and that potential exposures are still occurring but are being controlled to the extent

possible. The group member then stated that the FYR Guidance documents do not appear to have an answer for the situation that is occurring (sediment sites where fish restrictions are in place) and asked for an EPA policy decision for a remedy that is completed, ICs are in place, and potential exposures are still occurring. EPA stated that this is still being discussed and that they are going to continue to review all available data and other FYRs. The group member mentioned that the report should state that everybody is doing everything they can and exposures are still occurring.

A group member requested a table of other sites' FYRs to discuss with the group. EPA responded that they would provide the table and decide as a group whether to discuss.

### **Discussion on Model Forecasts**

The group discussed how the model was used during the decision. Some members of the group asked how EPA would address the uncertainty in the data provided, and EPA responded that this could be discussed in technical forums later.

EPA discussed the delays in implementation of the project, and New York State (NYS) responded with their thoughts on the appropriate delay for implementation.

A group member asked how EPA will evaluate MNR if EPA was not holding to the forecast tables from the ROD. EPA responded that the modeling forecast tables would be used but there might be other things used to assist in assessing goals. The group member asked EPA to provide their numbers when they were available, and stated that they believed quantitative goals would be needed to assess MNR.

A group member stated that adaptive changes should be used in the upcoming OM&M programs to make sure that the proper data was being assessed and that current knowledge would be used in assessing the river. The group member also stated that EPA's position that "time is the most important element" to reaching the goal was a fundamental change in EPA's interpretation of their initial decision. EPA reiterated that the 2010 Scope of Work (including the OM&M Scope of Work) was part of a legal agreement with GE, but that changes are already being discussed.

The group discussed the potential protectiveness determinations for the FYR and EPA's thinking on the determinations. EPA reiterated that this was being discussed and had not been finalized, and that EPA was considering other sites' determinations for reference and was considering all of the relevant data.

A member of the group asked for an increased public comment period to explain the points to their group and the public. EPA indicated that once it knows when the report will go out to the public it will further consider the request to increase the public comment period.

Future topics were discussed by the group. Group members asked about the sediment sampling, habitat reconstruction, the black bass special study. A group member asked about when the special study report would be available, and asked if EPA would do additional species. EPA said they would get back to the group member about the date of the report, and said that additional species might be considered if necessary.

### **Follow-up Items:**

The following items will be completed either prior to the next meeting or during the FYR process.

- EPA agreed to provide the group with a table of other potentially applicable FYRs.

**Next meeting date:** November 30 for public workshop.

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Conference Call Summary**  
**Thursday February 9, 2017**  
**10:00 AM – 11:00 PM**

**Agenda:** The purpose of the call was to answer questions from the team regarding the recent information shared with the team.

**Meeting Summary:**

In the week prior to the call, EPA had shared with the FYR team a number of items. These included the following:

- Slides showing the fish concentrations in the Hudson River, updated with the 2016 fall fish data,
- Data files on the 2016 fall surface sediment data collection,
- Presentations by members of the EPA team given at the recent sediment remediation conference,
- Recommendations from New York State on the five-year review, and
- A draft outline of the Five-Year Review Report including a list of appendices

EPA called for the meeting to allow team members to ask questions about the recent information provided, as some of the information is very technical and may become considerations in the five-year review. EPA has received information from many to consider in the FYR to date (NYS, NOAA, various letters from elected officials, and comments from the FYR team during our calls/meetings). EPA has a lot to consider in developing the FYR report. Currently, EPA and its contractors are working on technical evaluations for the report. EPA will, as information becomes available and time allows, share some of these evaluations with the FYR team to help facilitate your review. EPA anticipates that, in late March, they will be sharing sections of the report with Region 2 management and the technical team in headquarters. Approximately mid-April is the target for releasing the report to the public. EPA will determine the best method to respond to comments once they are received.

*Questions on Fish Data*

Questions on fish data included collection of fish data below the Troy Dam and the fishing restrictions. EPA stated that EPA and NYSDEC share data on the project with NYSDOH for consideration in of the advisories. NYSDOH states that they would need to see continual improvement in the numbers over time in order for there to be an adjustment to consumption advisories. NYSDOH also indicated that there are additional factors beyond fish data related to consumption of fish that they take into consideration related to reducing the advisories.

*Questions on Sediment Data*

EPA stated that sediment data shared with the team was encouraging. A request was made for the grain size data and the PCB congener analysis (Method 1668 data). EPA said that the data would be provided and noted it was still being validated.

*Questions on Report Contents*

The team asked EPA if they would be sharing the full report with the FYR team. EPA stated that they would be sharing some of the sections ahead of time, but the team will get the report when it is released to the



public. There was a discussion on the habitat reconstruction and how it will be completed in the future. EPA indicated that habitat work is part of long-term monitoring and has its own specific requirements. Habitat work is reported by GE in the Monitoring Maintenance and Adaptive Management (MM&AM) report each year.

#### *Questions on Water Data*

A question regarding PCB load was asked concerning potential differences in how load was presented at the recent sediment conference. EPA didn't think there were differences but will have its contractor look at the different presentations on load to see if there were any differences in how it was reported. The timeline was discussed concerning the recent data collected and if there was sufficient time to consider this new data in the FYR report. EPA clarified the water data to be included in the FYR report.

#### *Questions on Risk Assessments*

The question was brought up on how climate change might affect the risk assessments. EPA said it will follow up internally at EPA related to the considerations of climate change and it will be discussed as appropriate. EPA also pointed out that some high flow events on the Hudson River in 2011 were good tests of caps installed to river bottom to contain PCBs in the long-term.

EPA stated that another call would be planned for Thursday, February 23<sup>rd</sup> at 10 am. It was EPA's intent to get out more information on the FYR report and the next call may be a chance to discuss this information.

#### **Follow-up Items:**

The following items were noted as requiring follow-up:

- EPA will include a discussion during the next team call to respond to written questions received from US Fish and Wildlife
- EPA to send out a table of information on FYRs from other sediment sites
- EPA will discuss with the FYR team recent Hudson River Foundation recommendations provided to EPA
- EPA to send out FYR report information as it becomes available

**Next meeting date:** February 23<sup>rd</sup> for a team call.

**Five-Year Review (FYR) Team Call**  
**Hudson River PCBs Superfund Site**  
**Conference Call Summary**  
**Thursday February 23, 2017**  
**11:00 AM – 12:00 PM**

**Agenda:** The purpose of the call was to discuss questions provided by US Fish and Wildlife, for EPA to answer other questions and for EPA to provide an update on the FYR report.

**Meeting Summary:**

In the week prior to the call, EPA had shared with the FYR team the PCB congener and grain size data collected as part of the fall 2016 sediment sampling program.

EPA discussed project recommendations provided by the Hudson River Foundation with the FYR team. The following is a summary of the discussion:

Questions were generally related to the load at Waterford and the methodology for analyzing samples. NYSDEC stated that they understand the load at Waterford to have increased, in spite of recent lower concentrations. EPA stated that they are studying the load data and haven't drawn a conclusion yet. Members asked if EPA would be sharing the load calculations prior to issuing the report. EPA stated that this will be an appendix to the report and they will share it if time allows.

Other questions on recent meetings were on the analytical methodology. NOAA asked if the HRF discussions on the use of method 1668 (a congener-based method) would cause EPA to move away from the Aroclor method used for much of the sampling on the project. EPA stated that there are implications to switching and they understand HRF is encouraging a more resolute analysis. Some 1668 data has been collected but EPA is still using primarily Aroclor at this stage of the project. EPA further clarified that, as the project moves closer to achieving tissue targets and RAOs, they may select a more resolute analysis such as Method 1668. EPA will continue to evaluate best and most appropriate method for PCB analysis and plans to meet with NYS and GE in the near future to discuss in more detail.

Other questions concerning the recent meetings with HRF concerned their model on sediment movement on the river. EPA stated that they know travel times vary and they will discuss in more detail with HRF. It was noted by EPA that travel time determinations are difficult to determine in the lower river due to tidal influence. Members asked if this will change EPA's sampling program. EPA indicated that a great deal of time and effort by all involved agencies has gone into establishing the current program and that some adjustments will be needed over time but EPA does not plan on making significant changes.

*Questions provided by US Fish and Wildlife were responded to by EPA and discussed by the FYR team.*

Discussions covered multiple topics including:

- Members wanted to know how EPA is measuring risks of exposure. EPA explained the approach planned for the FYR which includes reviewing the exposure and toxicity parameters in Question B to determine if any of the risk assessment conclusions would change. Further EPA reminded the team that EPA is not redoing the risk assessment.
- A member wanted to know how baseline body burdens were being taken into account and whether or not bioaccumulation has been taken into account. EPA indicated that the fish tissue concentrations reflect bioaccumulation of PCBs in the fish. In addition, the toxicity values developed by the Integrated

Risk Information System (IRIS) included an evaluation of studies in animals (specifically monkeys) who had reached a pharmacokinetic steady-state based on PCB concentrations in adipose tissue and/or blood e.g., the animals had a body burden. EPA also reminded the team there are many studies available related to the toxicity of PCBs. Further EPA pointed out that the IRIS file also describes the limitations of human studies including limited knowledge of the original PCB mixtures, exposure levels and other details of exposure that are not known. Based on these limitations the animals studies were used in the derivation of the toxicity values for the evaluation of non-cancer toxicity. In addition, EPA relied on studies in four Aroclors in the derivation of the cancer slope factor.

- A member asked how threatened and endangered (T&E) species will be factored into the review. EPA stated that they will be generally considered and discussed in the review but may not be identified as the most sensitive species. EPA will coordinate with NYSDEC and USFWS to identify any new T&E listings for the Hudson River.
- A member asked if EPA was using the Environmental Justice (EJ) mapping tool to inform decisions concerning fish consumption. EPA indicated that EJ screening is not directly part of the five-year review. Risks to subsistence anglers were evaluated for the risk assessment performed for the ROD, and EPA believes that cancer risks and non-cancer health hazards to subsistence anglers were adequately captured in the risk assessment. EPA will discuss EJ further internally and anticipates including a discussion of EJ in the FYR report.

**Follow-up Items:**

EPA agreed that as technical section of the FYR report are completed and if time allows they will be provided to the team.

# **Second Five-Year Review Report Hudson River PCBs Superfund Site**

## **APPENDIX 12**

### **FIVE-YEAR REVIEW TEAM AND STAKEHOLDER INVOLVEMENT**

**Attachment 12-B Introductory Five-Year Review Team Presentation,  
Given June 22, 2016**

Prepared by:  
Ecology & Environment, Inc.

May 2017

# Five-Year Review Team Meeting

June 22, 2016

EPA Hudson River Office

## (I) Roles and Responsibilities

EPA selects the Five-Year Review (FYR) team -

FYR guidance Section 3.3 – “You should determine the appropriate level of assistance and team structure. For some reviews, the project manager may be the only member of the team, consulting with technical experts as necessary. For other reviews, a multi-disciplinary team may be needed to adequately review the protectiveness of the remedy.”

### EPA Hudson River Superfund Site – Five-Year Review Team – 2<sup>nd</sup> FYR

	Organization	Name	Title	Alternate
1	USEPA         (US Army Corps)	Gary Klawinski	Project Director	Michael Cheplowitz
2		Joe Battipaglia	Project Manager	Jennifer LaPoma
3		Larisa Romanowski	Community Involvement Coordinator	David Kluesner
4		John Fazzolari	Coordinator (Ecology and Environment)	Deepali McCloe
5		Jennifer Edwards	EPA Superfund HQ – Five Year Review	Kate Garufi
6		Chloe Metz	EPA Region 2 – Five Year Review	-
7		Marian Olsen	Human Health Risk	-
8		Marc Greenberg	EPA Superfund HQ - Ecological Risk	-
9		Doug Fischer	Site Attorney	Tom Lieber
10		Louis Berger Group Ecology & Environment	Technical Support (as needed) Technical Support (as needed)	- -
11	NYSDEC	Kevin Farrar	Section Chief – Hudson River Team	Dave Tromp or Will Shaw
12	NYSDOH	Bridget Boyd	Public Health Specialist	Justin Deming
13	NYS Canal Corporation	James Candiloro	Director of Environmental Affairs	Joe Savoie
14	National Parks Service	Amy Bracewell	Superintendent: Saratoga National Battlefield	Donna Davies
15	NOAA	Lisa Rosman	Regional Resource Coordinator	Jay Field or Tom Brosnan
16	US Fish and Wildlife	Kathryn Jahn	DOI Manager	-
17	Community Advisory Group	Abigail Jones	Environmental and User Group	Gil Hawkins
18		Althea Mullarkey	Environmental and User Group	Manna Jo Greene/Dave Mathis
19		Julia Stokes	Saratoga County Interests	Peter Goutos
20		Merrilyn Pulver-Moulthrop	Washington County Interests	Chris DeBolt

**Note:** It is anticipated that primary members participate regularly in meetings. Alternates would attend/participate if the primary member is unable. Other experts and technical support would attend as coordinated with EPA.



# (I) Roles and Responsibilities

- Roles

- EPA Project Management– responsible for the completion of the FYR
- EPA Community Involvement Coordinator – responsible for ensuring the required and appropriate elements of community involvement are completed
- State agencies function as support agencies. The state also is a trustee and a property owner
- Federal agencies are support agencies and also are trustees
- CAG – Representatives provide community perspective and can provide technical input
- EPA support members (include USACE contractors) – provide technical expertise and assist with responding to technical questions



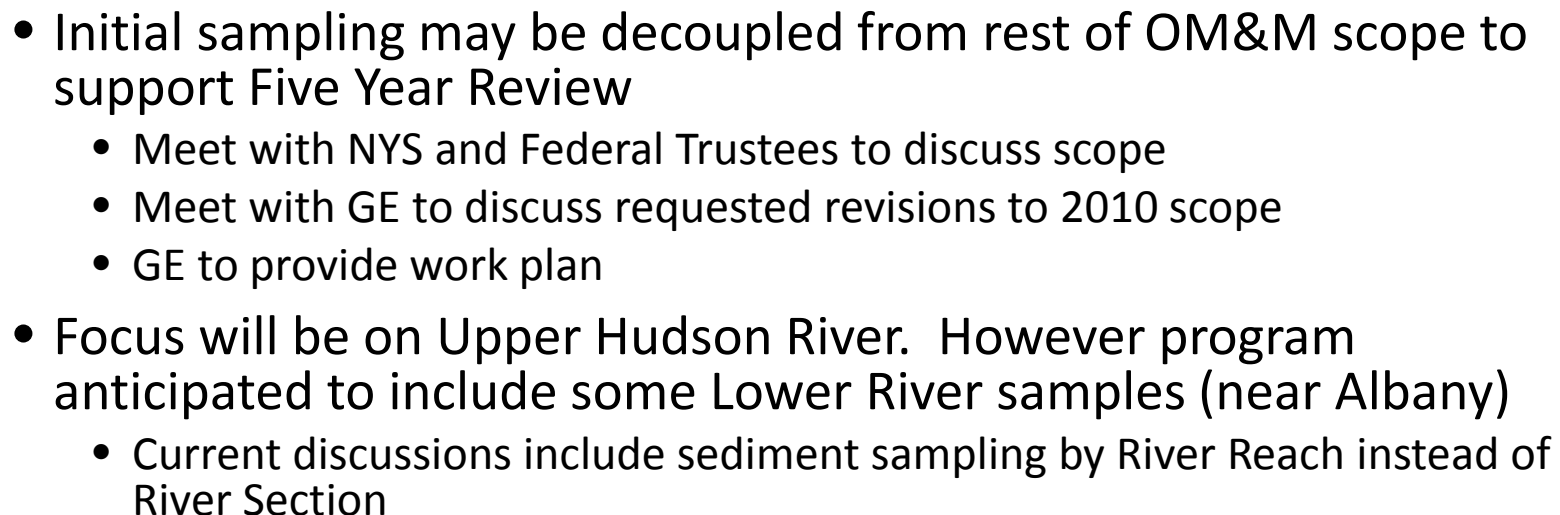
## (I) Roles and Responsibilities (Continued)

- 
- 
- Function of the Five-Year Review team
    - Team assembled by EPA to assist in accomplishing a complete FYR
    - It is anticipated that team members will participate in the process and contribute to the review
    - All team members share the understanding that EPA has a deadline for the FYR
    - All team members are committed to working closely together through the FYR process

## (II) Technical Topics

- Long term monitoring data collection (transition of programs)
  - Ongoing baseline monitoring – currently being conducted as part of RA
  - Operation Maintenance & Monitoring (OM&M) – some currently (Caps and Habitat)
- Key is to consistently assess the progress/function of the remedy
- OM&M Components and purpose:
  - Sediment – Assess recovery
  - Fish – Assess recovery, inform fish advisories
  - Water – Assess recovery, inform water users
  - Caps – Assess effectiveness and stability of caps
  - Habitat – Assess return of function to the river
- The data on fish, water, and sediment will continue to be collected and used to monitor river recovery and will be part of the analyses used in the FYR

## (II) 2016 Sediment Sampling

- 
- Initial sampling may be decoupled from rest of OM&M scope to support Five Year Review
    - Meet with NYS and Federal Trustees to discuss scope
    - Meet with GE to discuss requested revisions to 2010 scope
    - GE to provide work plan
  - Focus will be on Upper Hudson River. However program anticipated to include some Lower River samples (near Albany)
    - Current discussions include sediment sampling by River Reach instead of River Section
    - 8 River Reaches

## (II) 2016 Sediment Sampling (Continued)

- Sampling approach from 2010 Scope being reviewed
- Considerations:
  - Statistical power – influences number of samples
  - Consistency with previous location – best fit alignment with previous sample locations
  - Depth of samples – depth appropriate to assess changes over several years
  - When next sample event would occur
  - Potential assessment of new sediment deposits
  - Sediment type determination
  - Ongoing flood mud sampling
- Bathymetry surveys of areas that exceed mass per unit area but are buried with cleaner sediment – some coring may be needed

## (II) Fish Monitoring

- Fish collected in 2015 being processed – about 75% complete
- NYSDEC and EPA have met, observed lab processes, and we are currently finalizing filleting and processing procedures
  - Discussion will continue to finalize procedures
- 2016 spring sample collection is almost complete (approximately 375 fish)
  - Expect to begin analyzing 2016 spring samples once procedures are finalized
  - EPA is evaluating use of fish standard reference material
  - Data from 2016 spring fish expected in time to include in FYR
  - Fall 2016 fish would likely not be available in time for FYR

## (II) Fish Data Collection (Continued)

- Special Study (NYS Standard Fillet) retrospective data analysis for other species underway
- Special study report to be finalized
- Data from 2015, 2016 (spring fish), and Special Study will be used in FYR
- Evaluate against baseline to determine short-term changes
- Compare results to fish tissue targets and goals
- Discuss fish advisory status with NYS including status of project-funded activities to inform public about advisories for eating fish
- Discuss effectiveness of institutional controls and public outreach with NYS agencies
- Separately consider recovery in fish for both the upper river (by pool) and lower river separately

## (II) Water Monitoring



- Program in Upper Hudson River and Lower Hudson River ongoing
- Evaluate current and past load contribution to the lower river (Troy Dam)
  - Using data from in-season, off-season programs as well as after dredging
- Program will continue under OM&M
  - Potentially some changes to current program for OM&M; multiple stations will continue to be used for comparison
- Data will be compared to past model projections of load to Lower Hudson River and future trends will be evaluated

## (III) Potential Topics for Future Meetings

- Assessing river recovery
  - Current vs anticipated
    - Fish, water and sediment
- Follow-up items from 2012 FYR
- Fish advisories/institutional controls
  - Determine if there are additional or more effective outreach techniques available to communicate fish advisories and fishing restrictions
  - EPA to work closely with NYS
- Remnant deposit sites
  - Currently protective – maintenance, fencing, signage and access control
  - To be long term protective – need to implement controls to ensure integrity of caps systems
- Other



## (III) Assessing River Recovery

- 
- 
- Reminder - technical questions for FYR
    - Is the remedy functioning as intended by the decision documents?
    - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?
    - Has any other information come to light that could call into question the protectiveness of the remedy?

### (III) Analysis considerations for FYR

#### Fish

- Discuss the potential need for creel/angler surveys to assess institutional controls. May be follow-up item due to timing
- Assess fish tissue concentrations along with estimates used for ROD – including comparison of recovery rates
- Data obtained by baseline fish monitoring program - comparing pre-dredge and post-dredge tissue levels to baseline tissue levels
- Fish Special Study data – NYS Standard Fillet
- Additional consideration regarding NOAA analyses of fish recovery in the lower river

## (III) Analysis Considerations for FYR (Continued)

### Sediment

- Comparison of post-dredge surface sediment to ROD projections
- Update Appendix A from first FYR (take into consideration areas actually dredged vs what was anticipated to be dredged)
  - *Technical Memorandum - Comparison of ROD and SSAP-based Estimates of the Reduction in Surface Sediment*
- Update Appendix B from first FYR (incorporate RS 2 and RS 3)
  - *Technical Memorandum - Evaluation of Surface Sediment PCB Concentrations in River Section 1*
- Long term Monitoring of sediment - Historic sediment data sets including post-dredge sediment data, special study data (DDS) and OM&M data collection program

## (III) Analysis Considerations for FYR (Continued)

### Water


- Extensive historic water data, including Waterford
- Long-term monitoring to assess reduction in load ongoing
- OM&M monitoring program
- Evaluation of long-term flow data

### Others

- Consideration of air impacts

## (IV) Team Meetings (Anticipated Schedule)

- (Complete - May 5th) FYR Workshop
- (This meeting – June) – FYR Team Meeting
- July – FYR Team Conference call – CAG meeting
- August - FYR Team Meeting
- September – FYR Workshop
- October – FYR Team Conference call - CAG Meeting
- November - FYR Team Meeting
- December – FYR Team Conference call - CAG Meeting
- January 2017 – FYR Team Meeting (discuss report)
- February – FYR Report made available/Public Comment Period
- March – Review Comments
- April 23<sup>rd</sup> – FYR Report issued



Additional technical evaluations based on 2016 data to be completed in this timeframe

## (V) EPA Five-Year Review Schedule and Considerations

- EPA working on more detailed schedule (to be provided)
- Ongoing collection/analysis of water data
  - Expect to include data up to September 2016
- New data
  - 2015 fish results (Data expected mid to late August 2016)
  - Sediment sampling (Data expected late summer/early fall 2016)
  - 2016 (spring fish) results (Data dependent on EPA approval for analysis, which is anticipated soon. EPA expects data September/October 2016 timeframe)

## (VI) Format for Future Meetings

- Meeting logistics
  - Potential limitations to distribution of drafts or work-in-progress materials/analysis
  - In-person meetings preferred
  - Webex format or distribute slides/material as appropriate
  - Typical agenda for future meetings
  - Length of meetings (based on topic to be discussed)
  - Primary member from each group anticipated to attend
  - Meetings may not always have formal presentations
  - Open-dialogue format
  - Meeting location
  - Format based on topics to be discussed
  - Meeting notes

# **Second Five-Year Review Report Hudson River PCBs Superfund Site**

## **APPENDIX 12**

### **FIVE-YEAR REVIEW TEAM AND STAKEHOLDER INVOLVEMENT**

#### **Attachment 12-C Second Five-Year Review Public Notices**

Prepared by:  
Ecology & Environment, Inc.

May 2017



# EPA PUBLIC NOTICE

## U.S. Environmental Protection Agency Reviews Cleanup at Hudson River PCBs Superfund Site

The U.S. Environmental Protection Agency (EPA) has begun its second five-year review of the **Hudson River PCBs Superfund site**. The purpose of this review is to ensure that the cleanup is working as intended and will be protective of public health and the environment. The first five-year review for the Hudson River PCBs Superfund site was completed in 2012.

After six seasons of in-river work, dredging to remove polychlorinated biphenyls (PCBs) from a 40-mile stretch of the upper Hudson River between Troy and Fort Edward, New York was completed in the fall of 2015. The current five-year review will include an evaluation of all available data for the project, including fish, water and sediment data, as well as the new data to be collected this spring and summer.

The five-year review will also include a review of the areas of PCB-contaminated sediment located upstream of the areas that have been dredged. These areas, known as the remnant deposits, became exposed after the river level dropped following removal of the Fort Edward Dam in 1973. These areas are now capped, maintained, and monitored.

A summary of cleanup activities and an evaluation of the protectiveness of the implemented cleanup remedy will be included in the five year review report.

### What is an EPA Five-Year Review?

The five-year review is legally required under the Superfund law every five years after the start of on-site construction when contaminants remain at a site. These regular reviews include:

- Inspection of the site and cleanup technologies;
- Review of monitoring data, operating data, and maintenance records;
- Determination if any new regulatory requirements have been established since EPA's original cleanup decision was finalized; and
- Specifically for the Hudson River PCBs site, an assessment of current river conditions, including post-dredging sediment, water and fish data.

### How can the public be involved in the review?

As part of the EPA's commitment to conduct the five-year review in a transparent manner, in 2016 the EPA will hold public workshops with the Hudson River PCBs Site Community Advisory Group (CAG) to discuss the second five-year review. The Hudson River CAG meetings are open to the public and information about the workshops will be announced in advance. Following an evaluation of data and discussions with the federal Hudson River Natural Resources Trustees, New York State and the CAG, the EPA expects to issue the second five-year review report in late 2016 or early 2017 and will make it available for public comment. The second five-year review will be completed by April 23, 2017.

The five-year review will be available on the EPA's Hudson River website at [www.epa.gov/hudson](http://www.epa.gov/hudson) and in the local repositories established for the site.

For further information or to submit comments on the five-year review of the Hudson River PCBs Superfund site, please contact:

**Gary Klawinski**  
Project Director  
Hudson River Field Office  
187 Wolf Road, Suite 303  
Albany, NY 12205  
Phone: (518) 407-0400 or  
(866) 615-6490  
Email: [klawinski.gary@epa.gov](mailto:klawinski.gary@epa.gov)

OR

**Larisa Romanowski**  
Community Involvement Coordinator  
Hudson River Field Office  
187 Wolf Road, Suite 303  
Albany, NY 12205  
Phone: (518) 407-0400 or  
(866) 615-6490  
Email: [romanowski.larisa@epa.gov](mailto:romanowski.larisa@epa.gov)

**For more information: [www.epa.gov/hudson](http://www.epa.gov/hudson)**

# **Second Five-Year Review Report Hudson River PCBs Superfund Site**

## **APPENDIX 12**

### **FIVE-YEAR REVIEW TEAM AND STAKEHOLDER INVOLVEMENT**

#### **Attachment 12-D Second Five-Year Correspondence Received**

Prepared by:  
Ecology & Environment, Inc.

May 2017

**Fazzolari, John**

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**From:** Romanowski, Larisa <Romanowski.Larisa@epa.gov>  
**Sent:** Monday, May 02, 2016 2:34 PM  
**To:** Romanowski, Larisa  
**Subject:** [epa - hudson] Workshop on Second Review of Hudson River PCB Cleanup, May 5 in Saratoga Springs

On Thursday, May 5, 2016, the U.S. Environmental Protection Agency will hold the first of several workshops with the Hudson River PCBs Site Community Advisory Group to discuss the second five-year review for the Hudson River PCBs Superfund site. The Hudson River Community Advisory Group meetings are open to the public. The EPA expects to hold several more workshops with the Hudson River Community Advisory Group as the five-year review process proceeds.

The purpose of the five-year review is to ensure that the Hudson River cleanup is working as intended and will be protective of public health and the environment. The first five-year review for the Hudson River PCBs Superfund site was completed in 2012. The May 5 workshop will include an overview of the regulations that guide the review, the five-year review process and the anticipated scope and schedule for the review. The second five-year review will be completed by April 23, 2017.

**What:** Five-Year Review Workshop with the Hudson River PCBs Site Community Advisory Group

**When:** Thursday, May 5 at 1:00 pm

**Where:** Saratoga Spa State Park Administration Building, Gideon Putnam Room, 19 Roosevelt Drive, Saratoga Springs, NY 12866.

*If you have questions or want to be removed from the Hudson River group email distribution list, please reply to [romanowski.larisa@epa.gov](mailto:romanowski.larisa@epa.gov).*

**Fazzolari, John**

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**From:** Romanowski, Larisa <Romanowski.Larisa@epa.gov>  
**Sent:** Thursday, September 22, 2016 2:40 PM  
**To:** Romanowski, Larisa  
**Subject:** [epa - hudson] Five-Year Review Workshop scheduled for October 13 in Hyde Park for the Hudson River PCBs Superfund Site

On Thursday, October 13, 2016, the U.S. Environmental Protection Agency will hold a public workshop to discuss the progress of the second five-year review for the Hudson River PCBs Superfund site. This is the second in a series of workshops that are being held to involve the public during the five-year review process for the Hudson River PCBs Superfund site. The workshop has been scheduled for **4 - 6 p.m. on Thursday, October 13 at the Henry A. Wallace Center at the FDR Presidential Library and Home in Hyde Park, NY.**

The October 13 workshop will include an overview of the five-year review process and a summary of the topics that have been discussed to date during the ongoing monthly meetings of the Five-Year Review Team, which includes representatives from a number of state and federal agencies (New York State Department of Environmental Conservation, New York State Department of Health, New York State Canal Corporation, U.S. Fish and Wildlife Service, U.S. National Park Service and National Oceanic and Atmospheric Administration), and the site's Community Advisory Group. The anticipated schedule for the completion of the review and opportunities for public input will also be discussed.

The workshop is open to the public. More information about the second five-year review is available on the Hudson River PCBs site webpage: [www.epa.gov/hudson](http://www.epa.gov/hudson).

***Hudson River PCBs Superfund Site Five-Year Review Workshop***

Thursday, October 13, 2016

4:00 p.m.

The Henry A. Wallace Center at the FDR Presidential Library and Home  
Multipurpose Rooms B and C  
4097 Albany Post Road  
Hyde Park, NY 12538

*If you have questions or want to be removed from the Hudson River group email distribution list, please reply to [romanowski.larisa@epa.gov](mailto:romanowski.larisa@epa.gov).*

**Fazzolari, John**

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**From:** Romanowski, Larisa <Romanowski.Larisa@epa.gov>  
**Sent:** Wednesday, November 09, 2016 2:45 PM  
**To:** Romanowski, Larisa  
**Subject:** [epa - hudson] Five-Year Review Workshop on Wednesday, November 30 in Albany for the Hudson River PCBs Superfund Site

On Wednesday, November 30, 2016, the U.S. Environmental Protection Agency will hold a public workshop to discuss the progress of the second five-year review for the Hudson River PCBs Superfund site. This is the third of several workshops that are being held to involve the public during the five-year review process for the Hudson River PCBs Superfund site. The workshop has been scheduled for **7 - 9 p.m. on Wednesday, November 30 at the Albany Marriot.**

The November 30 workshop will include an overview of the five-year review process and a summary of the topics that have been discussed to date during the ongoing monthly meetings of the Five-Year Review Team, which includes representatives from a number of state and federal agencies (New York State Department of Environmental Conservation, New York State Department of Health, New York State Canal Corporation, U.S. Fish and Wildlife Service, U.S. National Park Service and National Oceanic and Atmospheric Administration), and the site's Community Advisory Group. The anticipated schedule for the completion of the review and opportunities for public input will also be discussed.

The workshop is open to the public. More information about the second five-year review is available on the Hudson River PCBs site webpage: [www.epa.gov/hudson](http://www.epa.gov/hudson).

***Hudson River PCBs Superfund Site Five-Year Review Workshop***

Wednesday, November 30, 2016

7:00 p.m.

Albany Marriott – Grand Ballroom Salon B

189 Wolf Road

Albany, NY 12205

*If you have questions or want to be removed from the Hudson River group email distribution list, please reply to [romanowski.larisa@epa.gov](mailto:romanowski.larisa@epa.gov).*

**Correspondence related to the second five-year review received by EPA. Listed by sender, chronologically.**

**Elected Officials**

September 19, 2016, correspondence from U.S Sen. Gillibrand to EPA Administrator McCarthy (EPA response dated November 4, 2016).

September 28, 2016, correspondence from U.S. Rep. Gibson to Regional Administrator Enck (EPA response dated November 9, 2016).

December 1, 2016, correspondence from U.S Rep. Tonko to EPA Administrator McCarthy (EPA response dated January 17, 2017).

December 2, 2016, correspondence from U.S. Sen. Gillibrand and U.S. Reps. Lowey, Maloney, Clarke, Crowley, Engel, Israel, Jeffries, Maloney, Meng, Nadler, Rice, Serrano, Slaughter and Velazquez to EPA Administrator McCarthy (EPA individual responses dated January 31, 2017).

December 21, 2016, correspondence from U.S. Rep. Gibson to Regional Administrator Enck (EPA response dated April 3, 2017).

May 2, 2017, correspondence from Assemblymember Woerner to EPA Administrator Pruitt (EPA response dated May 25, 2017).

May 3, 2017 correspondence from Dutchess County Executive Molinaro, Orange County Executive Neuhaus, Rockland County Executive Day and Westchester County Executive Astorino to EPA Administrator Pruitt (EPA response dated May 25, 2017).

May 23, 2017 correspondence from U.S. Sen. Gillibrand and U.S. Reps. Lowey, Maloney, Engel and Tonko to EPA Administrator Pruitt (EPA individual responses dated May 26, 2017).

**Hudson River Natural Resources Trustees**

March 28, 2016, correspondence from Hudson River Natural Resources Trustees to EPA Project Director Klawinski.

**Non-Governmental Organizations (NGOs)**

December 1, 2015, correspondence from Hudson River Sloop Clearwater, Riverkeeper, Scenic Hudson and Sierra Club to EPA Administrator McCarthy (EPA response dated December 18, 2015).

December 10, 2015, correspondence from Hudson River Sloop Clearwater, Riverkeeper, Natural Resources Defense Council, Scenic Hudson and Sierra Club to EPA Assistant Administrator Stanislaus (EPA response dated December 18, 2015).

December 17, 2015, correspondence from Natural Resources Defense Council, Hudson River Sloop Clearwater, Riverkeeper, Scenic Hudson and Sierra Club to Regional Administrator Enck, *Petition for Evaluation and Expansion of Remedial Action Selected in the 2002 Record of Decision for the Hudson River PCBs Superfund Site* (EPA response dated March 16, 2016).

January 22, 2016, correspondence from Environmental Advocates of New York, Hudson River Sloop Clearwater, Natural Resources Defense Council, Riverkeeper, Scenic Hudson and Sierra Club to EPA Assistant Administrator Stanislaus and Regional Administrator Enck (EPA response dated March 16, 2016).

February 23, 2016, correspondence from Hudson River Sloop Clearwater, Natural Resources Defense Council, Riverkeeper and Scenic Hudson to Regional Administrator Enck (EPA response dated March 16, 2016).

April 1, 2016, correspondence from Hudson River Sloop Clearwater, Natural Resources Defense Council, Riverkeeper and Scenic Hudson to Regional Administrator Enck (EPA response dated April 29, 2016).

November 10, 2016, correspondence from Riverkeeper and Scenic Hudson to EPA Project Director Klawinski.

#### **New York State Office of the Attorney General**

September 16, 2016, correspondence from Office of the Attorney General (Maureen Leary) to Regional Administrator Enck and ERRD Director Mugdan. Enclosure: *New York State Department of Health, Health Consultation: 1996 Survey of Hudson River Anglers* (EPA response dated September 27, 2016).

#### **New York State Department of Environmental Conservation**

August 21, 2016, correspondence from NYSDEC Commissioner Seggos to Regional Administrator Enck (EPA response dated September 15, 2016).

December 20, 2016, correspondence from NYSDEC Commissioner Seggos to Regional Administrator Enck (EPA response dated December 21, 2016).

November 14, 2016, correspondence from NYSDEC Commissioner Seggos to Regional Administrator Enck (EPA response dated December 16, 2016).