

November 15, 2016

Special Master Susan Calkins  
2112 Promontory Point Lane  
Gold River, CA 95670



**Subject: Monthly Status Report 10 for October 2016  
Penobscot River Estuary Phase III - Engineering Study**

Dear Ms. Calkins:

Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec Foster Wheeler) is pleased to submit this Monthly Status Report for the Penobscot River Estuary Phase III - Engineering Study. This report covers the period from October 1, 2016 through October 31, 2016. The monthly report has been re-formatted to include more detailed descriptions of activities performed by Task during the reporting period, as well as proposed activities by Task for the following period. A cash flow projection for the following 6-month period is also attached.

## **ACTIVITIES AND EVENTS DURING THE REPORTING PERIOD**

### Task 1 - Understanding the Problem and Existing Background Information

- No activities were conducted under this task during the reporting period. The billing on the associated invoice for the period is an invoice from Dianne Kopec for her services in attempting to resolve historical wetland sample coordinates and missing sample depths.

### Task 2 - Technologies and Remedial Approaches for Consideration

- Developed the Active Remedies Matrix, which was presented at the October 27, 2016 quarterly meeting;
- Summarized and evaluated comments from the litigants on the Technology Screening Report. Developed comment matrix and compiled list of major comments and questions to address at the quarterly meeting.
- Prepared draft *Work Order 2A-010 — Technology Screening Report: Report Revisions* for revision of the Technology Screening Report based on Litigant comments;
- Conducted planning work for treatability studies which included continuing to evaluate permitting requirements, identifying potential locations for pilot studies, and assessing additives and other tests to be conducted.
- Prepared draft *Work Order 2A-020 - Treatability/Pilot Studies: Scoping* for scoping of Treatability Studies, to include the following components:
  - Initial scoping activities to identify potential treatability studies/ engineering constructability evaluations;
  - Development of a list of proposed studies/evaluations that includes the rationale for conducting each study/evaluation and work order text to support the proposed work;;
  - Development of estimated costs for each study/evaluation;
  - Work Order 2A-020 - Treatability/Pilot Studies: Scoping will be conducted in advance of preparation of the Work Plan (Work Order 2A-030) so that the studies/evaluations

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to be included in the Work Plan are identified and agreed upon prior to completing the Work Plan. This effort will reduce comments and control Work Plan preparation/revision costs.

#### Task 3 - Risk Reduction Evaluation

- Continued development of pairing maps of sediment and tissue for different biota;
- Created pairing maps of prey items for BAF estimates (e.g., spiders, insects, and different biota);
- Continued BSAF calculations for terrestrial insects, spiders, polychaetes, amphipods, fish species, blue mussels, and birds based on historical data in preparation to add 2016 data when available;
- Completed review of risk-related comments on Technology Screening Report from Litigants;
- Continued development of historical biota data trending for the system in preparation for inclusion of 2016 data when available;
- Developed trends in Hg concentration for lobster and rock crab historical data and included the new 2015 dataset;
- Presented preliminary trending of historical data and potential percent change projections, presented preliminary BSAF results by location, discussed observations on methylmercury and total mercury concentration patterns from different portions of the river, and provided future objectives at the Quarterly Meeting on October 27, 2016;
- Created pairing maps of sediment and tissue for different biota;
- Initiated BSAF calculations for terrestrial insects, spiders, polychaetes, and blue mussels based on historical data in preparation to add 2016 data when available;

#### Task 4 - Potential Data Needs and Additional Field Work

- *Work Orders 003/003A - Mobile Sediment Pool Characterization:*
  - Conducted bulk material sample collection to fulfill Work Order 003A for continued evaluation of the mobile sediment/wood chip pool between 3-23 October 2016;
  - Conducted proof-of-concept testing for paired trap deployments for wood waste and sediment collection at Marsh River and Bucksport;
  - Performed sediment sampling of intertidal and subtidal sediments in Marsh River/Mendall Marsh for visual characterization/classification;
  - Performed sediment sampling of intertidal and subtidal sediments in the Eastern Channel and Orland River for visual characterization/classification;
  - Collected bulk sediment samples in lobster closure area between Fort Point and Cape Jellison at over 20 sampling stations using the standard ponar;
  - Conducted proof-of-concept testing for the sieve stack and dewatering bag to separate wood chips and sediment fines from the bulk material retrieved;
  - Conducted visual observation and recording of the location of wood waste exposed in the intertidal zone, churning in the surf line, and below the water line nearshore in the river reaches from Orrington to Gross Point;

- Deployed wood waste/sediment traps in Orland River, Verona Northeast, Bucksport, Frankfort Flats, and South Verona;
- Retrieved bulk material using environmental sampling procedures from intertidal and subtidal zones within the following Reaches: Orrington, Winterport, Frankfort Flats, Marsh River/Mendall Marsh, Bucksport, Verona Northeast, and Verona East;
- Inventoried and prepared bulk sediment samples for frozen cold storage at Winterport Boat Yard using a rental pod;
- Equipment storage, vessel de-rigging, and crew demobilization completed on 23 October 2016;
- Prepared field observation mapping and findings overview, which was presented at the October 27, 2016 quarterly meeting;
- October 6, 2016 – responded to in-person interview held at field station by Ms. Jana Wood, MEDEP, Industrial Stormwater Inspector, Bureau of Land and Water Quality. Ms. Wood was conducting an inspection of the boat yard and questioned Mr. Platt of Amec Foster Wheeler regarding retrieved material handling, waste disposal, and general operations of the field investigations. Ms. Wood appeared satisfied with the operations;
- October 18, 2016 – transmitted to Ms. Suzanne Miller, MEDEP, Eastern Regional Office Director in response to her request the Amec Foster Wheeler’s oversized figure depicting the Project extent (Bangor to Fort Point), Phase II sediment sample locations, EGADs sediment sample locations, location of publicly-owned parcels, and select location aerial photograph views as call-outs (this figure is commonly referred to as the “wall paper”);
- Outlined work elements performed since Spring 2016 that have led to improved understanding of the physical conditions, studies by others, and sediment characterizations by others, for presentation at the October 27, 2016 Quarterly Project Status Meeting;
- Edit the GIS shapefiles to depict the Project Reaches limits, which was presented at the October 27, 2016 quarterly meeting;
- Reviewed vendor invoices associated with field station, vessels, and dockage covering the period August through October 2016;
- Initiated research on recent Ellsworth, Maine dredging to follow-up on local lobsterman mention of bulk wood waste encountered and handled during that project’s construction;
- *Work Order 004 – 2016 Sediment and Water Quality Monitoring:*
  - September 26-27, 2016 – Amec Foster Wheeler conducted monthly water quality monitoring: collection of eight surface water samples in the river;
  - Continued data validation for August-September 2016 monthly surface water sampling events.
- *Work Order 005 – 2016 Biota Monitoring:*
  - Analyses of bird blood, insects, spiders, polychaetes, fish, and shellfish samples (Work Order 005) continued at Eurofins laboratory in Bothell, WA
- *Work Order 007 - 2015 ME DMR Lobster Analyses:*
  - Continued data validation on 2015 lobster and crab analytical data

- Prepared draft *Work Order 04A-010 - Analytical Methods Evaluation and OC Study* (formerly *Work Order 012*), which consists of the following components:
  - Analytical methods development for determining total mercury in woody debris;
  - Organic carbon study - through carbon-14 dating, determine whether organic carbon present in mobile pool sediments comes from degraded wood debris or vascular plants;
  - Evaluate trends in sediment Hg concentrations - conduct a comprehensive, systematic assessment of the data to evaluate whether mercury concentrations have changed over the past twenty years; and
  - Documentation of Conceptual Site Model refinements.

#### Task 5 - Phase III Engineering Study Report

- Charges to this task during the reporting period consisted of expenses for attendance at the Amec Foster Wheeler Technical Summit meeting held in Portland September 27-29, 2016.

#### Task 6 – Meetings/Communications

- October 25, 2016 – Amec Foster Wheeler submitted Invoice # J02205732 and Monthly Report for the month of September 2016 to the Special Master.
- Prepared for and attended October 27, 2016 Quarterly Status Meeting in Boston, MA with Special Master and Litigants
- Initiated development of *Work Order 06A-010 - Meetings/Reporting: Nov 2016 thru July 2017* (formerly *Work Order 013*). *Work Order 06A-010* consists of the following components:
  - Quarterly Status Meetings in January, April, and July 2017
  - Monthly Project Status Calls in November and December 2016, and February, March, May, and June 2017
  - Monthly Reports/Invoices for the period November 2016 through July 2017
  - Meetings with Regulatory Agencies (4 total assumed to be held in Augusta or Bangor, ME)
  - Meeting with Phase II Study Panel Members (1 day, in Boston, MA)

#### Task 7 – Community Involvement

- *Work Order 006 - Community Involvement:*
  - Developed draft website content
  - Gathered background materials, including reports, photos and website links

## **PROPOSED ACTIVITIES FOR THE FOLLOWING PERIOD**

### Task 1 - Understanding the Problem and Existing Background Information

- No further activity planned under this task.

### Task 2 - Technologies and Remedial Approaches for Consideration

- Prepare and submit *Work Order 2A-010 - Technology Screening Report: Report Revisions* for revision of the Technology Screening Report based on Litigant comments
- Prepare and submit *Work Order 2A-020 - Treatability/Pilot Studies: Scoping* for scoping
- Prepare draft *Work Order 2A-100 - Recovery Times & Sediment(Hg) Transport*, which consists of the following elements:
  - Evaluate spatial variability of water column characteristics downstream of Fort Point;
  - Evaluate sediment and Hg outflux downstream of Fort Point;
  - Evaluate sediment and Hg influx and fate upstream of former Veazie Dam location;
  - Evaluate vertical distribution of mobile pool mud and wood waste transport – Mendall Marsh and Orland River;
  - Conduct in-situ measurements to evaluate surface sediment stability;
  - Refine surface sediment Hg characterization upstream of Orono, ME;
  - Characterize total tidal currents in the estuary;
  - Refine dissolved versus suspended Hg equilibrium;
  - Refine interpolation of velocity and bed shear stress; and
  - Refine mass estimates of Hg in mobile pool.

### Task 3 - Risk Reduction Evaluation

- Continue BSAF calculations for biota;
- Initiate trending of biota based on length and/or weight adjusted data;
- Conduct historical biota data trending by sample location;
- Generate flow chart showing the management/decision process for inclusion of each line of evidence demonstrating the interrelatedness of each study component in remedy selection; and
- Initiate PRG estimation.

### Task 4 - Potential Data Needs and Additional Field Work

- *Work Orders 003/003A - Mobile Sediment Pool Characterization:*
  - Initiate development of tables and figures documenting observations and visual characterization of October 2016 field sampling for incorporation into a data package for electronic transmittal to the Special Master and Litigants;
- *Work Order 004 – 2016 Sediment and Water Quality Monitoring:*
  - Continue data validation for September-October 2016 monthly surface water sampling events;

- Initiate development of 2016 Sediment and Water Quality Monitoring Report
- *Work Order 005 – 2016 Biota Monitoring:*
  - Analyses of fish and shellfish samples collected in September 2016 to continue at Eurofins laboratory in Bothell, WA
  - Initiate data validation of September 2016 fish and shellfish analytical data
- *Work Order 007 - 2015 ME DMR Lobster Analyses:*
  - Submit 2015 ME DMR lobster and crab validated analytical data to ME DMR, Special Master, and Litigants
- Submit *Work Order 04A-010 - Analytical Methods Evaluation and OC Study* (formerly Work Order 012)
- Prepare and submit *Work Order 04A-020 - Analyses/Evaluation of WO 003A Samples:*
  - Standardize sediment sample processing and subsampling procedures in a manner appropriate to the heterogeneous, organic-enriched conditions found in the Penobscot River Estuary;
  - Quantify any bias or variance that could result from previous subsampling procedures;
  - Evaluate of wood waste separation from the sediment/wood waste mix, and assess mercury concentrations in the wood waste and fine-grained, predominantly mineral, sediment fractions;
  - Analyze sediment and wood waste samples collected using wire eel traps;
  - Prepare a Technical Memorandum summarizing the findings of Work Orders 003, 003A, and 4A-020
  - Conduct wood chip degradation study
  - Package and store (in a sub-freezing cooler) excess bulk wood waste and sediment sample material retrieved during the October 2016 field event

#### Task 5 - Phase III Engineering Study Report

- No activities planned for the upcoming reporting period

#### Task 6 – Meetings/Communications

- Submit *Work Order 06A-010 - Meetings/Reporting: Nov 2016 thru July 2017* for review/approval by the Special Master/Litigants;
- Prepare and submit invoice and monthly report for November 2016 to the Special Master/Litigants;
- Prepare meeting minutes for the October 27, 2016 Quarterly Status Meeting in Boston, MA, and submit to the Special Master/Litigants;
- Attend Monthly Project Status Call on November 17, 2106 with the Special Master/Litigants.

#### Task 7 – Community Involvement

- Provide link to draft website for Special Master and Litigant review of format and proposed content.

### **SCHEDULE UPDATE, FUTURE MEETINGS, AND CONFERENCE CALLS**

- Monthly Project Status Calls will be held from 2-3PM (Eastern time) on the following dates:
  - November 17, 2016
  - December 15, 2016
  - February 2017 (TBD)
  - March 2017 (TBD)
  - May 2017 (TBD)
  - June 2017 (TBD)
- Quarterly Status Meetings with the Special Master and Litigants will be held in Boston, MA on the following dates:
  - January 19, 2017
  - April 27, 2017
  - July 20, 2017

### **ISSUES AND PROBLEMS IDENTIFIED DURING THE REPORTING PERIOD**

- Due to scheduling constraints, some work proceeded ahead of authorization. This is being addressed through discussions with the Special Master and Litigants.

### **CASH FLOW PROJECTION**

Please refer to Attachment A for the Amec Foster Wheeler financial status summary and cash flow projection for the next six months.

If you have any questions regarding the information contained in this report, please call me at 207-651-0315.

Sincerely,



Nelson Walter, PE, LSP, LEP, PMP  
Principal Project Manager

### **Attachments**

Attachment A – Cash Flow Projection

cc: Mitchell Bernard (NRDC)      Patricia Duft (Mallinckrodt)  
Jared Thompson (NRDC)      Jeffrey Talbert (Preti Flaherty)  
Project File (3616166052)