

Appendix F  
Construction Quality Assurance Plan  
Summary Table

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There are three main categories of Construction Quality Assurance Plan (CQAP) activities that will be performed during construction:

- Construction Inspection and Engineering Support (Compliance with Plans and Specifications)
- Environmental Controls and Monitoring (Compliance with Environmental Protection Requirements)
- Remedy Performance (Compliance with Record of Decision remedial action requirements immediately following construction)

The CQAP will be developed during Intermediate (60%) RD and will include a description of construction Quality Assurance (QA) roles and responsibilities and QA activities that the Implementing Entity's representative will conduct. Decision frameworks will also be presented.

In General, contractor QC requirements are defined in the Specifications, and summarized in the CQAP. QA activities are defined in the CQAP and reflected in the specifications.

The following table summarizes key elements of the CQAP.

Construction Element	QA Categories	Contractor QC Requirements	Implementing Entity QA Activities
<b>PRE-CONSTRUCTION ACTIVITIES</b>			
Pre-Construction Submittals and Mobilization	Construction Inspection and Engineering Support	<p>Contractor submits pre-construction submittals as required in specifications:</p> <ul style="list-style-type: none"> <li>• Remedial Action Work Plan (e.g., construction means and methods, material supply source, transport and disposal plan, landfill facility location, sequencing and construction schedule). <ul style="list-style-type: none"> <li>– Project Work Plan</li> <li>– Initial Project Schedule</li> <li>– Site-Specific Safety and Health Plan</li> <li>– Traffic Control Plan</li> <li>– Environmental Pollution Control</li> <li>– Contractor QC Plan</li> <li>– Transportation and Disposal Plan</li> <li>– Surveying Plan</li> <li>– Capping Plan</li> <li>– Dredging and Excavation Plan</li> <li>– Vessel Management Plan</li> <li>– Demolition Plan</li> </ul> </li> <li>• Structures condition documentation (within or adjacent to RAAs)</li> <li>• Pre-construction bathymetric/topographic survey of RAAs, including buffer areas and calculation of quantities</li> <li>• Contractor equipment inspection</li> <li>• Procure materials, including placement materials, and conduct and document results of QC testing</li> <li>• Establish real time kinematic positioning control and maintain</li> <li>• Establish and maintain vertical control including tide gauges and survey monuments</li> </ul>	<ul style="list-style-type: none"> <li>• Implementing Entity review and approve contractor pre-construction submittals</li> <li>• Equipment pre-construction inspection review</li> <li>• Structures condition documentation (within or adjacent to RAAs) review</li> <li>• Review and approve pre-construction bathymetric/topographic surveys and calculation of quantities</li> <li>• Review and approve materials</li> <li>• Independent Licensed Surveyor perform existing conditions surveys</li> <li>• Implementing Entity may perform independent QA surveys.</li> </ul>
<b>DURING CONSTRUCTION ACTIVITIES</b>			
Construction Progress Tracking and Reporting	Construction Inspection and Engineering Support	<p>Contractor submits daily and weekly construction reports including:</p> <ul style="list-style-type: none"> <li>• Quantity estimates (dredging, placement)</li> <li>• Progress summaries</li> <li>• Environmental monitoring summaries</li> <li>• Vessel movements</li> <li>• Health and safety incidences</li> <li>• Work hours, notes, visual observations and change conditions</li> <li>• Look-ahead construction schedule and activities</li> </ul>	<p>Review daily and weekly construction reports and prepare:</p> <ul style="list-style-type: none"> <li>• Progress summaries for all construction activities</li> <li>• Environmental monitoring summaries</li> <li>• Deviations from contractor’s Remedial Action Workplan or Plans and Specifications</li> </ul>
Structures Demolition, Installation and Utility Relocation	Construction Inspection and Engineering Support	<p>Contractor submits daily and weekly construction reports including:</p> <ul style="list-style-type: none"> <li>• Material supply quality submittals</li> <li>• As-built surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Review daily and weekly progress tracking and reports</li> </ul>

Construction Element	QA Categories	Contractor QC Requirements	Implementing Entity QA Activities
Dredging and Excavation Activities	Construction Inspection and Engineering Support	<ul style="list-style-type: none"> <li>Conduct and submit bathymetric/topographic surveys (progress surveys, post-dredge acceptance surveys [as required by specifications], as-built surveys)</li> <li>Submit barge measurements (empty and loaded) for transport and transload operations</li> <li>Submit disposal weight tickets from approved landfill facility(ies)</li> <li>Submit bucket maps showing work progress</li> </ul>	<ul style="list-style-type: none"> <li>Review contractor's daily and weekly construction reports</li> <li>On-site inspections and observations</li> <li>Review bathymetric and topographic surveys, bucket maps, barge measurements and weight tickets for conformance with plans and specifications</li> <li>Independent Licensed Surveyor perform acceptance surveys (may be contracted by Owner or contractor TBD)</li> <li>Review transload and disposal information to track progress of transport and disposal of dredged materials/debris at approved landfill(s)</li> <li>Determine need for corrective action or contingency re-dredging in coordination with EPA</li> </ul>
Placement Activities (Enhanced Natural Recovery, Capping, Backfilling, Slope armoring, Residuals Management Cover)	Construction Inspection and Engineering Support	<ul style="list-style-type: none"> <li>Conduct and submit bathymetric/topographic surveys (progress surveys, post-dredge acceptance surveys [as required by specifications], as-built surveys)</li> <li>Submit placement material supplier test results per specifications</li> <li>Submit placement material supplier quantity weight tickets and/or transport barge measurements</li> <li>Submit bucket maps showing work progress</li> </ul>	<ul style="list-style-type: none"> <li>Review contractor's daily and weekly construction reports</li> <li>On-site inspections and observations</li> <li>Review surveys and other submitted information for conformance with plans and specifications</li> <li>Independent Licensed Surveyor perform acceptance surveys (may be contracted by Owner or contractor TBD)</li> <li>Review material supplier and barge measurement information to track quantities of placement materials</li> <li>Review material supplier testing results for acceptance</li> <li>Conduct verification sampling (e.g., coring, sediment profile imaging, probing, placement elevations and thickness, mass balance calculations)</li> <li>Determine need for corrective action in coordination with EPA</li> </ul>
Site Cleanup and Restoration	Construction Inspection and Engineering Support	<ul style="list-style-type: none"> <li>Submit Closeout Checklist to Resident Engineer for review</li> <li>Submit draft As-built record drawings</li> <li>Inspect all construction-impacted areas, including staging and transload to cleanup, restore vegetation (as required), and decontaminate equipment and the site for final acceptance per the specifications</li> </ul>	<ul style="list-style-type: none"> <li>Review contractor's Closeout Checklist and identify final corrective actions</li> <li>Review as-built surveys</li> <li>Inspect the site to confirm cleanup, restoration and decontamination work has occurred per the contractor's Remedial Action Workplan</li> </ul>
All Construction Activities	Environmental Controls and Monitoring	<ul style="list-style-type: none"> <li>Comply with specification requirements for all environmental protection criteria, and comply with contractor's approved Environmental Protection Plan</li> <li>Upgrade BMPs if environmental performance criteria are not being met</li> <li>Contractor's QC officer will be responsible for ensuring compliance with environmental protection criteria</li> </ul>	<ul style="list-style-type: none"> <li>Conduct water quality monitoring during in-water construction activities per the approved Water Quality Monitoring Plan to ensure contractor is meeting performance criteria in the specifications and the Water Quality Monitoring Plan and to modify BMPs if needed</li> <li>Other required monitoring to be determined in consultation with EPA during 60% and 90% RD</li> <li>On-site inspectors will observe contractor's operations to note compliance with environmental protection specifications, and the contractor's approved Environmental Protection Plan.</li> <li>Follow the procedures in the Community Outreach and Communications Plan, including notifications and communications</li> <li>Determine need for corrective action in coordination with EPA</li> </ul>
Dredging, excavation and demolition activities	Environmental Controls and Monitoring	<ul style="list-style-type: none"> <li>Visual observations for potential evidence of archaeological, cultural and historic artifacts; reporting to Implementing Entity Archaeological Monitor</li> </ul>	<ul style="list-style-type: none"> <li>Archaeological Monitor implements the approved Monitoring and Inadvertent Discovery Plan during dredging, excavation and demolition activities</li> <li>Coordinate response and communications to all relevant stakeholders if an inadvertent discovery occurs</li> </ul>
Required Contingency Actions	Remedy Performance	<ul style="list-style-type: none"> <li>Perform contingency actions, as directed, in compliance with plans and specifications,</li> </ul>	<ul style="list-style-type: none"> <li>Conduct post-required dredging performance monitoring for identifying missed inventory and/or generated residuals</li> <li>Conduct post-material placement performance monitoring for capping, ENR, and RMC placement areas</li> <li>Determine need for contingency action in coordination with EPA</li> <li>Implement (through directing the contractor) contingency actions per the EPA approved contingency action decision framework as described in the CQAP (TBD)</li> </ul>
<b>POST-CONSTRUCTION ACTIVITIES</b>			
Post-Construction Documentation	Remedy Performance	<ul style="list-style-type: none"> <li>Submit final As-built record drawings</li> <li>Submit contractor's Closeout Report</li> </ul>	<ul style="list-style-type: none"> <li>Develop and Submit Completion Report to EPA</li> </ul>

Notes:  
BMP: best management practice  
CQAP: Construction Quality Assurance Plan  
EPA: US Environmental Protection Agency  
QA: quality assurance  
QC: quality control  
RAA: remedial action area