

# **Contaminated Sediments Technical Advisory Group (CSTAG)**

## **Policy and Procedures**

January 2022

NOTICE: This document provides guidance to U.S. Environmental Protection Agency (EPA) regions concerning how the Agency intends to exercise its discretion in implementing one aspect of the Comprehensive Environmental Response, Compensation and Liability Act remedy selection process. This guidance is designed to implement national policy on these issues. Some of the statutory provisions described in this document contain legally binding requirements. However, this document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, it cannot impose legally binding requirements on EPA, states, or the regulated community, and may not apply to a particular situation based upon the circumstances. Any decisions regarding a particular situation will be made based on the statutes and regulations, and EPA decision-makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Interested parties are free to raise questions and objections about the substance of this guidance and the appropriateness of the application of this guidance to a particular situation, and the Agency welcomes public input on this document at any time. EPA may change this guidance in the future.

## **BACKGROUND**

In 2002, the U. S. Environmental Protection Agency (EPA) published “Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites” (Office of Solid Waste and Emergency Response [OSWER] Directive 9285.6-08, February 12, 2002).<sup>1</sup> This memorandum established an Office of Superfund Remediation and Technology Innovation (OSRTI) contaminated sediment site consultation process to "help ensure that regional site managers appropriately consider these principles before site-specific risk management decisions are made" (p.9).

The memo organized two tiers of consultation for contaminated sediment sites. Tier 1 includes all sites or areas where the proposed or selected sediment action will address more than 10,000 cubic yards or five acres of contaminated sediment. At these sites, the EPA regional office develops a Tier 1 consultation memo to describe how the 11 sediment management principles were considered in its decisions. Tier 2 status is limited to “a small number of large, complex or controversial contaminated sediment sites” that are subject to the advice and monitoring of the Contaminated Sediments Technical Advisory Group (CSTAG). These Tier 2 sites are identified by the EPA OSRTI Office Director and/or the Office of Land and Emergency Management (OLEM) Assistant Administrator in consultation with the regions and are subject to the policies and procedures herein.

CSTAG policies and procedures may be updated periodically to clarify procedures and to reflect new information and lessons learned. In 2020, as part of the Superfund Task Force recommendations<sup>2</sup>, CSTAG procedures were updated to include more frequent feedback from CSTAG to the region, include a review of whether CSTAG recommendations were adopted by the region, and permit CSTAG to add topic experts as needed.

## **CSTAG PURPOSES**

The purposes of the CSTAG are to:

- Assist in the management and implementation of nationally consistent sediment characterization and remedial actions across OLEM’s remedial programs.
- Help remedial project managers (RPMs) and regional/headquarters decision-makers responsible for large and potentially expensive and/or controversial contaminated sediment sites with issues related to site investigation, remedy selection and management consistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the 2002 Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites, the 2005 “Contaminated Sediment Remediation Guidance for Hazardous Waste Sites” (OSWER Directive 9355.0-85),<sup>3</sup> and the 2017 “Remediating

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<sup>1</sup> <https://semspub.epa.gov/work/HQ/174512.pdf>

<sup>2</sup> [https://www.epa.gov/sites/production/files/2017-07/documents/superfund\\_task\\_force\\_report.pdf](https://www.epa.gov/sites/production/files/2017-07/documents/superfund_task_force_report.pdf)

<sup>3</sup> <https://semspub.epa.gov/work/HQ/174471.pdf>

Contaminated Sediment Sites - Clarification of Several Key Remedial Investigation/Feasibility Study and Risk Management Recommendations, and Updated Contaminated Sediment Technical Advisory Group Operating Procedures” (OLEM Directive 9200.1-130),<sup>4</sup> and other EPA guidances and policies appropriate for sediment sites;

- Promote the use of state-of-the-science tools and methods to complete an adequate and timely characterization of the nature and extent of contamination and to help ensure the selection of cost-effective remedies that will control contaminant sources and achieve long-term protection while minimizing short-term impacts; and
- Enhance national consistency in the characterization and management of sediment sites by providing a forum for exchange of technical information among the CSTAG members and the regions.

## **MEMBERSHIP**

CSTAG members are scientists, engineers, or site managers with expertise in sediment site characterization, remediation, or decision-making. Members are from EPA regions, EPA Office of Research and Development, OSRTI, and the U.S. Army Corps of Engineers (USACE). The chair of the CSTAG is located in OSRTI.

Members are expected to participate in monthly conference calls and in two to three meetings per year. Meetings may include a site visit while others occur via conference call. Each member’s home office is expected to pay his/her travel costs, which are charged to the site-specific account for the site under review when the meeting involves a site visit. Membership entails a significant time commitment, especially when preparing for a meeting as the host region.

Each member's obligation is to support the CSTAG’s role and to provide unbiased technical advice that is not influenced by, or intended to influence, decisions or issues under the member’s purview. To avoid potential bias, members will not participate in the development and writing of CSTAG recommendations for decisions in which they have current or former substantive involvement. However, those members are expected to be present during meetings to serve as a technical resource. There is no expectation that regional members will support his/her region's position on site issues.

Regions and Offices are expected to nominate CSTAG members based on the following criteria:

- (1) Experience and expertise in developing remedial investigations and feasibility studies (RI/FSSs) for contaminated sediment sites.
- (2) Experience in developing or reviewing proposed plans, records of decision (ROD) or ROD amendments, or engineering evaluation/cost analysis (EE/CAs) for contaminated sediment sites.

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<sup>4</sup> <https://semspub.epa.gov/work/HQ/196834.pdf>

- (3) Ability to share technical knowledge with RPMs and CSTAG members.
- (4) Ability to actively participate in national technical meetings and conferences.
- (5) Ability to objectively evaluate site-specific information from a scientific and technical perspective that is independent of their regional affiliation and the ability to assess the extent to which site evaluations and decisions follow the recommendations in the sediment remediation guidance and the general state of practice for sediment sites.
- (6) Ability to compromise and reach consensus on issues when drafting CSTAG recommendations.

If warranted by site circumstances or topics, other EPA or USACE personnel may participate in site meetings, including in deliberations and the development of recommendations. In addition, CSTAG may also contract to provide technical expertise on topic areas. Contracted support will not author or be responsible for developing CSTAG recommendations but will provide technical input to CSTAG as needed.

## **MEETINGS**

The Regional Superfund Division Director responsible for the site, in consultation with the CSTAG Chair and the OSRTI Office Director, should consider participation from other parties, such as states, tribes, natural resource management agencies, municipalities, community groups (CAGs, TASC recipients, TAGs, etc.) or potentially responsible parties (PRPs) at the first and third site milestone meetings. This may be direct involvement, a separate session for stakeholder presentations, or conference calls, etc. (for more information, see “Stakeholder Engagement” below).

**Initial Site Meeting** An introductory informational meeting should typically occur by conference call during the RI/FS scoping phase. These meetings should be conducted prior to the initiation of work and may inform the conceptual site model, sampling and analysis plans, health and safety plans or other work plans. While not expected, the introductory meeting may result in written recommendations. This initial meeting should include an examination of opportunities for risk reduction through early actions (See Superfund Task Force recommendation 5). Some sites do not become Tier 2 CSTAG sites until later in the decision-making process; in which case the initial meeting will typically occur within 60 days of a Tier 2 designation.

**Site Milestone Meetings** In-person CSTAG reviews are slated to occur prior to each of the following project milestones (described in greater detail below).

- (1) Site characterization, including contaminant distribution, background calculations, and sediment stability at or near completion of the remedial investigation;
- (2) Preliminary remediation goal and remedial action objective (RAO) development at or near completion of the human and ecological risk assessments;
- (3) Development of the site’s overall cleanup strategy and evaluation of remedial alternatives at or near completion of the draft feasibility study; and

(4) Prior to the proposed plan or EE/CA's issuance.

The project milestone meetings will be held when enough information on the specified milestone topic has been developed to support recommendations and decisions. These limited-scope meetings will result in a focused set of written recommendations for each milestone, unless CSTAG determines that no recommendations are necessary. The meetings are intended to be held early enough to allow time for the region to consider and to incorporate recommendations into decision documents. The site RPM and CSTAG chair will determine meeting dates.

If there are significant site data available, the site visit and stakeholder presentations may be part of the initial site meeting. For most new CSTAG sites, however, it is expected that the site visit will take place at the site characterization meeting.

If the site is divided into smaller operable units, or if smaller or less complex early interim or removal actions are planned as a component of the larger site strategy, it may be necessary to combine milestone meetings, topics, or actions. Milestone meetings or topics may also be combined if materials are ready at the time of review.

## **TOPICS AND CONTENT**

A site information package should be sent to all CSTAG members at least two weeks before the milestone meetings. The package should describe how the eleven principles (applicable to that milestone) are being considered in planning and conducting site investigations, involving the affected parties, and selecting and implementing a response. Content that should be presented and included in the package for the milestone meetings are listed below. These are general guidelines and any important additional site-specific topics not mentioned should be discussed in the site information package.

**Initial Site Meeting** The site's RPM is expected to describe the draft/current conceptual site model and to provide a summary of available information on the current and historical distribution of contaminants in surface sediment, sub-surface sediment, water and biota; sources of contamination and the extent to which they have been controlled; and the initial overall site strategy to address contamination in a comprehensive, logical fashion.

### **Site Milestone Meetings**

(1) Site characterization, including contaminant distribution, background calculations, and sediment stability:

- A summary of available contaminant data in sediment (surface and at depth), biota, and surface water;
- A full conceptual site model, describing the physical, chemical and biological processes that determine the transport of contaminants from sources to receptors;
- Information on:
  - Site conditions that relate to remedial alternatives (e.g., dredging, capping, in-situ amendments, enhanced natural recovery, or monitored natural recovery);

- Sediment deposition and erosion and processes expected to drive changes in sediment and biota contaminant concentrations;
- Ongoing releases and uncontrolled sources;
- Background contaminant concentrations in appropriate media; and
- Expectations for the development of predictive approaches for evaluating sediment stability, remedy effectiveness, or natural recovery.

(2) Remedial action objectives and preliminary remediation goals development at (or near) completion of the human and ecological risk assessments

- Information on RAOs, including:
  - Contaminants and media of concern, actual/potential exposure pathways, and associated remediation goals;
  - Risk reduction expectations, the estimated timeframe required to meet the expectations, and how risk reduction will be measured and monitored;
  - Evaluation of whether risk reduction expectations are achievable through site remediation; and
- Information on the derivation and application of preliminary remediation goals, including:
  - Outline of the human and ecological risk assessments;
  - The contaminants of potential concern to the contaminant of concern analysis;
  - Basis for preliminary remediation goal development, including the primary receptors, relevant exposure areas, exposure assumptions, and consideration of current and future land use; and
  - Summary of whether the preliminary remediation goals are intended as point concentrations or exposure unit averages.

(3) Development of the site’s overall cleanup strategy and evaluation of remedial alternatives

- Description of:
  - The incorporation or consideration of early actions, removals or iterative or phased approaches;
  - The development and screening of alternatives;
  - Alternative evaluations and comparisons and underlying assumptions; and
- Development and implementation of predictive approaches for evaluating sediment stability, remedy effectiveness, or natural recovery.

(4) Final Review. Two weeks prior to the final review, a “consideration memo” describing how the region considered each of the 11 risk management principles should be submitted to the CSTAG and the OSRTI Office Director. The consideration memo should generally be less than 30 pages and should follow the recommended format presented in the “Guidelines for the OSRTI Review of Consideration Memos on Tier 1 Sediment Sites” (Attachment A). The site presentation will focus on the 11 risk management principles application at the site and aspects of the selected remedy, including:

- A full description of the remedy, including the applied remedial technologies and basis for selection;
- The nine criteria evaluation and rationale for remedy selection;
- The basis and projections of the remedy's long- and short-term risk-reduction expectations; and
- The monitoring endpoints used to measure progress towards or attainment of remediation goals/cleanup levels and RAOs.

Depending on how much time has lapsed since the original site tour and the degree to which CSTAG membership changes during that time frame, a site tour may be warranted during the final meeting.

The CSTAG will not track the progress of sites after the ROD (or ROD amendment) is signed; such tracking is the role of the OSRTI Sediment Team. However, if the region decides that a ROD amendment is needed, the region is expected to provide a full update to the CSTAG as well as a revised consideration memo before developing a proposed plan for the ROD amendment.

**Additional Meetings at Regional Request** If desired, regions can solicit CSTAG input on additional topics at Tier 2 sites to expedite resolution of technical issues or garner feedback on potential approaches. For example, the region can request a CSTAG consultation to listen to and provide input on technical disputes between the region and PRPs, states or tribes. The format, content and scope of participation of such meetings will be determined on a case-by-case basis as determined by the region and CSTAG.

**Informational Updates** At the discretion of the CSTAG or region, informational updates (typically, informal webinars) may be held to inform the CSTAG on site topics or developments of interest. These updates will normally be short listening sessions intended to convey information and will not result in written recommendations. After the ROD, CSTAG may also request informational updates on remediation activities or progress toward site objectives at former Tier 2 sites.

## **MEETING LOGISTICS**

The site briefings are based upon the site's complexity and data availability. It can include other EPA staff and contractors, and other federal agency staff, where appropriate. The first in-person meeting should include a site visit. The milestone and final meetings should be in-person, unless otherwise determined. All meetings should schedule at least a half-day CSTAG-only session where the CSTAG deliberates and drafts recommendations. Members of the site team should be available during the CSTAG deliberations to answer questions. In addition to the CSTAG members and regional/state staff, the OSRTI Regional Coordinator will also be invited to attend. Only CSTAG (or National Remedy Review Board [NRRB] members, if applicable) will participate in the development and drafting of recommendations.

## **STAKEHOLDER ENGAGEMENT**

Stakeholders are expected to be informed of CSTAG meetings and encouraged to provide written comments prior to all meetings. Direct stakeholder participation and presentation may occur at the first and third milestone meetings (site characterization and cleanup strategy/feasibility study meetings). Additional milestone meetings may incorporate in-person stakeholder presentations if that is determined appropriate by the region, the CSTAG chair, and the OSRTI Office Director.

The EPA RPM should notify stakeholders that have had significant involvement in the site of upcoming CSTAG meetings and invite them to provide written materials (all meetings) and/or to give a short oral presentation to the CSTAG during the site characterization and cleanup strategy/feasibility study meetings. Stakeholder presentations will normally include the lead representatives of the state agency, PRP(s), trustees, tribes, municipalities and community groups. The state and tribal environmental staff and other site stakeholders should be sent invitations at least six weeks before the meeting. Attachment B provides an example invitation letter. The presentation should identify any issues important to the stakeholder. Each presentation should be no more than 20 minutes and should allow 10-20 minutes for CSTAG questions. Invited stakeholders may elect to submit written comments instead of (or in addition to) an oral presentation. All written submittals should be sent to the EPA RPM at least one week before the meeting and should not exceed 30 pages.

## **NATIONAL REMEDY REVIEW BOARD COORDINATION**

The Contaminated Sediments Technical Advisory Group will be the review board for the contaminated sediment portions of Tier 2 sites that may otherwise be subject to NRRB review. Meetings will include the NRRB Chair, as appropriate, to provide a policy perspective. Tier 1 sediment sites do not undergo a full CSTAG review. Per the 2002 Principles memo (see Background section), the RPM consults with the OSRTI Regional Coordinator and CSTAG Chair on the Tier 1 sediment actions. Tier 1 sites that have been identified by NRRB for early technical engagement will go through the NRRB process. For continuity and coordination, the CSTAG chair and/or designated CSTAG member(s) will attend the NRRB meeting(s), serving as the NRRB's sediment expert(s).

## **RECOMMENDATIONS**

Within six weeks of the meeting's occurrence, the CSTAG Chair will send written recommendations to the site RPM, Branch or Section Chief, and Division Director. The OSRTI Office Director and the appropriate OSRTI Regional Branch Chief and Division Director as well as the Regional Branch or Section Chief will be copied, and a copy will be placed on the CSTAG web page.<sup>5,6</sup> The region will provide the CSTAG chair an interim written response to the

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<sup>5</sup><https://www.epa.gov/superfund/large-sediment-sites-tiers-1-2>

<sup>6</sup> Draft and early versions of recommendations and attendant comments are considered pre-decisional and will not be posted on the CSTAG website.



recommendations within six weeks. It is expected that the response will come from, at a minimum, the responsible Regional Branch Chief. There is an expectation that the Regional Superfund Division Director has been briefed and concurs with the response.

The CSTAG chair will evaluate whether the region adopted or is anticipated to adopt the recommendations, or if the region provided a satisfactory rationale for not adopting the recommendations. The Chair will provide his/her determination on the sufficiency of the responses to the OSRTI Assessment and Remediation (ARD) Division Director and the OSRTI Immediate Office for review. The OSRTI Office Director will discuss the response with the Superfund Regional Division Director within approximately two weeks of receiving the region's response memo, if necessary. While it is anticipated that issues can be resolved at this level, disagreements may be raised to higher levels as appropriate. The region is expected to send a copy of the final response, along with the CSTAG recommendations, to all stakeholders. OSRTI will place the final regional response on the CSTAG web page.

### **ADDITIONAL INFORMATION**

Should a region have questions about CSTAG procedures, they are encouraged to contact Karl Gustavson, the CSTAG chair at [gustavson.karl@epa.gov](mailto:gustavson.karl@epa.gov) or 202.566.0972 or Brigid Lowery, the Director of the Assessment and Remediation Division [lowery.brigid@epa.gov](mailto:lowery.brigid@epa.gov) or 202.566.0977.