

Strategy for Addressing 464 Lead Smelter Sites

August 30, 2012

Purpose

This is a strategy for assessing lead smelter sites that had been the subject of a study conducted by William P. Eckel in 2001. Over the past decade, as a follow-up to the Eckel study, EPA has worked with State partners to identify and assess a number of lead smelters identified by Dr. Eckel, resulting in decisions that further federal involvement under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA) is warranted or, in certain cases, that cleanup is necessary. However, there remain lead smelters where the assessment process is ongoing. It will be necessary to determine the extent to which new information recently made available to EPA could affect planned, ongoing and completed assessments, including any decisions associated with these assessments. It will also be necessary to identify smelters that may pose a health threat requiring further assessment and, as necessary, cleanup. EPA recognizes that there exist lead smelter sites in addition to those identified in the Eckel study. As part of the national site assessment program, EPA will continue efforts to evaluate all sites, including other smelters, brought to the Agency's attention. However, this strategy focuses on the 464 smelters identified by Dr. Eckel.

Background

Dr. Eckel was the primary author of a report titled *Discovering Unrecognized Lead-Smelting Sites by Historical Methods*, which was published in the American Journal of Public Health in April 2001. Dr. Eckel developed this report from historical literature searches for secondary lead smelters and refined his findings to include 464 battery lead, babbitt metal, and solder smelters that were not in federal or state environmental databases at the time, based on records that documented smelters operating from 1931 through 1964. Smelters are a source of lead and possibly other heavy metals that have contributed to environmental contamination.

Lead Smelter Assessment Strategy

EPA has developed a strategy to ensure successful completion of remaining Superfund site assessment work at the 464 smelters, which includes identifying sites requiring no further evaluation beyond pre-CERCLIS screening, identifying sites to be entered into the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) active site inventory, performing remedial assessments, documenting final assessment decisions and identifying those smelters where cleanup may be required. When reviewing information associated with each of the smelters, EPA will consider the following circumstances when determining priorities for assessment and, as necessary, cleanup:

- Sites where sample collection or collection of additional samples was recommended
- Sites where impacts of prior industrial activities may not have been fully evaluated
- Sites whose location was difficult or impossible to determine based on available information
- Sites previously referred to the state or other programs
- Sites where sampling results indicate the presence of lead or other heavy metals, attributable to past smelter operations, above risk-based screening levels and background
- Sites where no previous assessment had been conducted
- Sites located near where children may congregate or be active (e.g., residential areas, day care centers, schools)
- Sites where population density (e.g., population within 1/4 mile of the listed address) is high

- Sites with potential Environmental Justice issues

It is important to note that the objective of pre-CERCLIS screening is to determine, based on a review of available information, whether a potential Superfund site should be entered into or excluded from the active CERCLIS inventory. If a site is placed in the active CERCLIS inventory, information obtained will be used to perform a preliminary assessment, which is a limited-scope, screening-type investigation that involves collection of additional information and performance of a site reconnaissance. The goal of a preliminary assessment is to determine whether further investigation under Superfund, such as a site inspection and/or evaluation under the hazard ranking system for potential placement on the National Priorities List (NPL), is warranted. Samples are typically not collected during a pre-CERCLIS screening or preliminary assessment, although existing sampling data, if available, would be reviewed. In certain instances, EPA regions may elect to collect samples as part of a pre-CERCLIS screening or preliminary assessment.

Implementation

In order to ensure continued progress, EPA has outlined an approach, as part of this strategy, that involves undertaking the following actions in consultation with state, tribal and other environmental and public health partners:

1. Review and properly categorize the status of 464 smelter sites (e.g., non-NPL status, action start/completion dates), in consultation with site assessment managers from each region, to ensure that data tracked in CERCLIS is up to date and accurate for each of the 464 sites where assessment or cleanup has been conducted under the federal Superfund program (January 27, 2012 – July 31, 2012).

Output: EPA possesses timely and accurate information on the 464 smelter sites.

Information tracked by EPA will allow a comprehensive evaluation of all 464 smelter sites in order to determine next steps in the assessment process.

2. Complete review of the 48 “unrecognized” lead smelter sites (without CERCLA IDs) reported by the Office of Superfund Remediation and Technology Innovation (OSRTI) in February 2012 as not having been assessed by EPA or referred to another program for assessment – applies only to Regions 2, 5 and 9 (July 31, 2012).

Output: Pre-CERCLIS screening or equivalent will be completed at these 48 lead smelter sites. EPA will assure that documentation obtained as part of the pre-CERCLIS screening process, including equivalent screenings undertaken by states or other programs, is of sufficient quality to support decisions whether or not potential sites are added to the CERCLIS active inventory. Documentation will include clearly stated rationale supporting each decision and, in cases where sites are excluded from the CERCLIS active inventory, indicate whether these sites are being addressed by state, tribal or other programs.

The status of these sites will be correctly reflected in CERCLIS to identify: (1) sites excluded from the CERCLIS active site inventory (no further evaluation necessary beyond pre-CERCLIS screening) and (2) sites entered into the CERCLIS active site inventory (requiring remedial and/or removal assessments).

3. Review existing information in consultation with the removal program to determine if any smelter sites could pose an imminent and substantial threat to human health requiring cleanup (August 31, 2012).

Output: All smelters potentially posing an imminent and substantial threat will have been identified and referred to the removal program for evaluation to determine if cleanup is required. It is recognized that all removal assessments will not be completed before August 31st.

Additionally, it is anticipated that this consultation process will continue in the future as new information is acquired for smelter sites. Smelters will be evaluated based on a review of available sampling results (e.g., data from EPA or other parties) and comparison to existing risk-based screening levels, as well as a consideration of data quality, naturally-occurring levels of heavy metals (“background” concentrations) and the potential presence of other (non-smelter-related) sources of contamination. During this process, regional toxicologists, regional representatives from the Agency for Toxic Substances and Disease Registry (ATSDR) and, as necessary, the lead Technical Review Workgroup (TRW) will be consulted. These technical specialists can assist in evaluating potential threats posed by contamination, deciding whether a site should be referred to the removal program and, as necessary, determining when cleanup is necessary. When evaluating exposures to lead, site managers and/or regional toxicologists are encouraged coordinate with the regional representative from the lead TRW.

CERCLIS will be updated to reflect involvement of the Removal program and to document cleanup decisions.

4. Complete pre-CERCLIS screening at all remaining sites that are not in CERCLIS (without CERCLA IDs) and update CERCLIS accordingly (October 31, 2012).

Output: To the maximum extent practicable given available resources and competing priorities, pre-CERCLIS screening or equivalent (if sites are being addressed by state, tribal or other programs) will be completed. EPA will assure that documentation obtained as part of the pre-CERCLIS screening process, including equivalent screenings undertaken by states or other programs, is of sufficient quality to support decisions whether or not potential sites are added to the CERCLIS active inventory. Documentation will include clearly stated rationale supporting each decision and, in cases where sites are excluded from the CERCLIS active inventory, indicate whether these sites are being addressed by state, tribal or other programs.

The status of these sites will be correctly reflected in CERCLIS to identify: (1) sites excluded from the CERCLIS active site inventory (no further evaluation necessary beyond pre-CERCLIS screening) and (2) sites entered into the CERCLIS active site inventory (requiring remedial and/or removal assessments).

5. Continue ongoing smelter evaluation efforts to ensure review of file information for all 464 smelter sites, taking into account the aforementioned circumstances, thereby identifying any sites requiring further assessment or reassessment (January 27, 2012 – October 31, 2013).

Output: In addition to the aforementioned sites, the remaining smelter sites, including those presently being evaluated, will have been assessed to determine whether response actions are required. As necessary, EPA will develop a plan of action for undertaking further assessment activities or, for sites where a final site assessment decision had previously been made, reassessments.

CERCLIS will also have been updated to reflect the current status of all 464 smelter sites. The assessment process will include, at a minimum, performance of a pre-CERCLIS screening (or equivalent). To the maximum extent practicable given available resources and competing priorities, EPA will ensure that a preliminary assessment has been performed for all sites entered into the CERCLIS active site inventory.

Outreach and Coordination

EPA regions will undertake assessment of smelters in close consultation with state, tribal and other environmental and public health partners, as well as key stakeholders such as members of the community and elected representatives. Outreach and coordination activities are intended to focus on sites that have progressed beyond the pre-CERCLIS screening assessment stage and that, based on existing information, may pose the most threat to human health and the environment.

Taking into account the current and future level of interest that may be anticipated at smelter sites, EPA headquarters will explore development of a “boilerplate” communications strategy, fact sheets or other communication/outreach tools for regional use in order to proactively respond to concerns raised by members of the community and other stakeholders.

Community Involvement

EPA regions, in close collaboration with EPA headquarters, will develop a communications strategy to address concerns that may arise at the following categories of smelter sites: (1) no further federal involvement under CERCLA warranted; (2) currently being assessed by the Agency under the remedial or removal programs; (3) referred to state, tribal or other programs and (4) CERCLA cleanup planned, ongoing or completed.

1. If no further federal involvement under CERCLA is warranted, the Agency will indicate the reason for making this determination (e.g., lack of CERCLA authority, levels of lead or other contaminants at the site do not pose a health threat necessitating further assessment, site being addressed by state, tribal or other programs). EPA will clearly communicate instances where the Agency lacks the CERCLA authority to respond to contamination (e.g., soil contamination resulting solely from lead-based paint) and identify other organizations/programs that may be in a position to address such contamination. EPA will also indicate when further remedial assessment is not warranted either because contaminants cannot be attributed to past smelter operations or because the number of people potentially affected by contamination is too low for the site to qualify for the National Priorities List.
2. For sites currently being assessed by the EPA, the Agency will be prepared to discuss the type of assessment activity planned or ongoing (removal assessment or remedial assessment) and provide the anticipated completion date. If sites are undergoing remedial assessment, EPA will indicate the particular assessment phase (pre-CERCLIS screening, preliminary assessment, site inspection, etc.) and whether the Agency or state/tribe (under Cooperative Agreement with EPA or absent Cooperative Agreement) is performing this work.
3. For sites referred to state, tribal or other programs, the Agency will identify a point-of-contact (at the state, tribal or local level) who can respond to questions from property owners or community members regarding the status of investigations and cleanups.

4. For sites where CERCLA cleanup is determined to be necessary, EPA will indicate the cleanup status (planned, ongoing or completed) and, if planned/ongoing, the anticipated completion date. If cleanup has been completed, EPA will be prepared to describe the nature of cleanup such as the particular response actions undertaken and hazardous substances addressed. EPA will also indicate whether further evaluation as part of the remedial assessment process is required.

At sites where EPA (or state/tribe under Cooperative Agreement) collected samples, when sharing results with property owners, the Agency will explain the significance of the results and indicate whether or not follow-on evaluation is planned. If no further federal involvement under CERCLA is warranted, the Agency will indicate the reason for making this determination and explain that these sites have been referred to state, tribal or other programs for follow-up. If further federal involvement under CERCLA is warranted, the Agency will discuss the type of assessment activity planned and provide the anticipated assessment completion date. EPA will also indicate whether the site is being evaluated for possible removal actions.

Consultation with Public Health Agencies

EPA will consult with public health agencies, such as ATSDR and/or other governmental health departments, which can assist the Agency by: (1) reviewing sample results; (2) providing recommendations for follow-on evaluations; (3) assessing threats/risks posed by contamination; (4) supporting decisions whether a removal action is necessary and (5) identifying a point-of-contact who can respond to questions from property owners or community members regarding potential health effects posed by contamination. Regional ATSDR representatives are available to assist in undertaking the aforementioned tasks and state health departments may also be able to provide support either independently or through existing agreements with ATSDR. The extent to which local health departments could assist will vary from locality to locality.

EPA headquarters will consult with the Centers for Disease Control (CDC) and Prevention's Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) regarding new scientific knowledge and technical developments and the practical implications for childhood lead poisoning prevention efforts. EPA headquarters is reviewing the recommendations provided by the ACCLPP to the CDC regarding new strategies for defining elevated blood lead levels among children. If it is determined that changes to the Agency's approaches or policies are needed, impacts of such a change will be carefully evaluated. Findings will be shared with the regions.

Remedial/Removal Program Interaction

EPA regions will continue to rely upon existing internal coordination processes between remedial and removal programs when identifying sites where contamination could pose an imminent and substantial threat to human health. Regional removal programs will coordinate with the Headquarters' Office of Emergency Management on all lead cleanups involving nationally significant or precedent-setting issues. Communications will emphasize that, if at any time in the site evaluation process an imminent and substantial threat is identified, EPA is prepared to use its emergency removal authority. It is anticipated that a determination of such threats would also be made in consultation with regional EPA toxicologists or risk assessors, regional ATSDR representatives and, as necessary, the lead TRW.

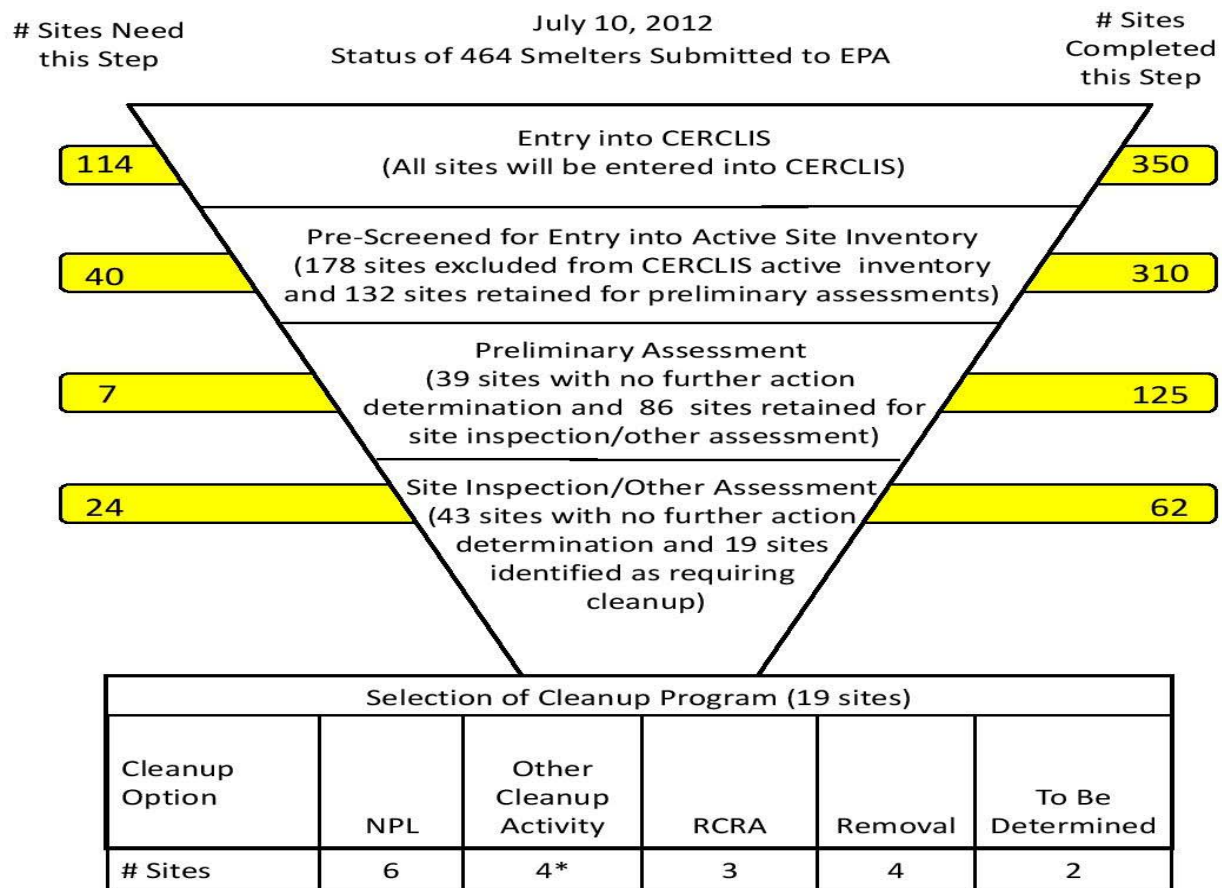
Referral to State or Tribal Governments

Whenever EPA refers sites to state or tribal governments for follow-up, the Agency will clearly explain the reason for the referral and will make available all releasable site-related information. This referral process will be documented as part of the final site assessment decision. For sites currently in the active CERCLIS inventory (undergoing pre-screening, preliminary assessments, site inspections, etc.), EPA regions should periodically follow-up with the party leading or managing investigations and cleanups to ensure adequate progress is being made.

Monitoring Progress (Status – July 10, 2012)

To the maximum extent practicable, given available resources and taking into account competing priorities, EPA makes every attempt to perform and complete evaluations as part of the remedial site assessment process within the time frames established under CERCLA, the National Contingency Plan and existing policy.

EPA headquarters (OSRTI) has developed the following flowchart that presents the current assessment status and progress made to date with respect to all 464 smelters:



* 2 of the 4 Other Cleanup Activity sites are represented by a single site in CERCLIS (Florida Smelting Co.)

Notes: (1) preliminary assessment includes remedial and removal assessment; (2) removal actions can occur at any point in the process and (3) no further action designation applies to the Federal Superfund program only [State and Tribal governments may perform further work at these sites under their own programs].

The flowchart depicts all 464 smelter sites and shows, in a sequential fashion, the number of sites falling into the various phases of the assessment process. Key decision points include entry of sites into CERCLIS (350 smelters already entered and 114 requiring entry), performance of pre-CERCLIS screening (310 smelters pre-screened and 40 requiring pre-screening) and the results of pre-screening (178 smelters excluded from the CERCLIS active inventory and 132 reaching the preliminary assessment stage).

Of the 132 smelters requiring preliminary assessments, 125 preliminary assessments have been completed and 7 preliminary assessments remain to be completed. Based on the completed preliminary assessments, a determination that no further federal action is required under CERCLA has been made at 39 smelters and 86 have reached the site inspection stage. Of the 86 smelters requiring site inspections (or other assessments), 62 site inspections (or other assessments) have been completed and 24 site inspections (or other assessments) remain to be completed. Based on the completed site inspections (or other assessments), a determination that no further federal action under CERCLA has been made at 43 smelters and 19 have been identified as requiring cleanup.

It is important to note that, as the remaining sites are continually entered into CERCLIS, the numbers of sites requiring pre-CERCLIS screening will change as will, in succession, the number of sites requiring a preliminary assessment and/or site inspection (or other assessments).

OSRTI will produce a tracking report, which will be updated quarterly, for use by EPA headquarters and the regions to monitor progress towards assessing smelters subject to this strategy. This report will identify sites requiring no further federal involvement under CERCLA, sites requiring further assessment and sites requiring cleanup (with cleanup program identified).

Timeline for Smelter-related Activities	
July 31, 2012	OSRTI develops CERCLIS tracking report to monitor progress at sites.
July 31, 2012	Using the spreadsheet prepared by OSRTI, regions undertake a preliminary review of new information, including sampling data, made available to the Agency to determine if any of these sites should be identified as high priorities for assessment or cleanup.
July 31, 2012	Regions review/update status and action data for each of the 464 smelters included on the CERCLIS active site inventory to reflect current information. CERCLIS pulls will form the basis for HQ reporting. For sites needing further remedial assessment, regions will add planned completion dates for ongoing assessments and planned start and completion dates for sites awaiting start of a new assessment.
July 31, 2012	Regions (where applicable) complete pre-CERCLIS screenings at the 48 sites unrecognized as of February 2012 and identify sites that should be entered into (or excluded from) the CERCLIS active site inventory.
August 31, 2012	Regions identify all smelters potentially posing an imminent and substantial threat to human health based on existing information. Sites will be evaluated as soon as practicable thereafter to determine if a removal action is necessary. It is recognized that all removal assessments will not be completed before August 31 st .
September 30, 2012	OSRTI explores possibility of revising existing pre-CERCLIS screening guidance (OSWER Directive 9375.2-11FS); including approaches for improving the historical records search process.
October 2012	OSRTI submits initial quarterly report on status/progress for all 464 sites. Initial report address sites excluded from the CERCLIS active inventory, which require no further evaluation beyond pre-CERCLIS screening, and sites entered into the CERCLIS active inventory, which require remedial and/or removal assessments.
October 31, 2012	Regions ensure, to the maximum extent practicable given available resources and competing priorities, that pre-CERCLIS screenings or equivalent are completed at the remaining smelters (without CERCLA IDs) to identify sites that should be entered into (or excluded from) the active inventory.
November 30, 2012	Regions will identify sites where a preliminary assessment has been performed or will be performed.
January 2013	OSRTI submits quarterly progress report to HQ senior management. This report and subsequent reports focus on sites entered into the CERCLIS active inventory needing remedial and/or removal assessments.
March 31, 2013	Regions report status of sites where preliminary assessments have been completed or are ongoing.
April 2013	OSRTI submits quarterly progress report to HQ senior management.
June 30, 2013	Regions report status of sites where preliminary assessments have been completed or are ongoing.
July 2013	OSRTI submits quarterly progress report to HQ senior management.
October 2013	OSRTI submits quarterly progress report to HQ senior management.
October 31, 2013	Regions complete preliminary assessments, to the maximum extent practicable given available resources and competing priorities, at all smelter sites included on the CERCLIS active inventory and develop a plan of action for addressing those sites that need further assessment or reassessment.
January 2014	OSRTI submits quarterly progress report to HQ senior management.

Lead Smelters – Additional Considerations

The following factors should be taken into account, as appropriate or necessary (i.e., sample collection may not be required during site assessment), by EPA, state and tribal governments during the evaluation process to determine the next steps with respect to assessment and cleanup of smelters:

Approach to Document/Records Review

- Information sources (historical aerial photographs, Sanborn maps, existing reports, etc.)
- Information gathering techniques (Internet, libraries, interviews, etc.)
- Findings/conclusions presented in existing reports (including recommendations/rationale)

Physical Setting/Site Conditions

- Land use at/near the site at the time of sampling
- Current land use (if known to have changed since sampling)
- Development activities subsequent to smelter operations
- Presence of buildings constructed before 1978 (lead-based paint contribution to observed soil contamination)
- Other (non-smelter) sources potentially contributing to observed soil contamination
- Extent of vegetative cover (e.g., bare versus grassy) at locations where soil samples were tested/collected

Approach to Sample Collection/Analysis (if sampling is performed)

- Number of samples collected
- Depth of samples collected
- Biased versus non-biased sampling
- Discrete versus composite sampling
- Number of aliquots per composite
- Proximity of samples to building drip lines
- Presence of paint chips in samples
- Background samples

XRF Instrumentation

- Precision/accuracy limitations make results from *in situ* analysis more qualitative in nature, while results from *ex situ* analysis results can be quantitative (or at least semi-quantitative).
- Presence of metals other than lead (especially risk-drivers) in soil above screening concentrations might affect site assessment decisions.
- Issues associated with XRF data including, but not necessarily limited to, differentiating among peaks for certain metals/elements or peak overlap (e.g., lead versus arsenic) are sometimes encountered and could affect site assessment decisions, especially if decisions are based solely on XRF data.

Laboratory Analysis

- Presence of metals other than lead (especially risk-drivers) in soil above screening concentrations might affect site assessment decisions.

- Collection of samples for laboratory analysis at locations where XRF testing was performed could be used for confirmation purposes.
- Comparison (i.e., degree of correlation) between laboratory and XRF results would support XRF findings.

Approach to Data Evaluation

- Data limitations/usability (quality assurance/quality control measures employed)
- Exposure assumptions
- Risk-based screening levels
- Attribution from past smelter operations versus other anthropogenic sources

Contacts: The Headquarters contact for this strategy is Drew Lausch at lausch.robert@epa.gov or 703-603-0721. Specific questions regarding the reporting and tracking of CERCLIS accomplishments should be directed to Randy Hippen at hippen.randy@epa.gov or 703-603-8829.