The One Tool You Need for RCRA Corrective Action, CERCLA & Due Diligence

Tim Bradburne, P.G.

BBJ GROUP

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Introduction

For many years, the Environmental Protection Agency (EPA) has encouraged the use of a Conceptual Site Model (CSM) as a best practice for Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) cleanups and Resource Conservation and Recovery Act (RCRA) corrective action.[1]

A CSM is a visual representation of environmental data that can clearly show many layers of information concurrently. The use of a CSM has benefits both in communication with the public and other stakeholders, and for focusing investigation and cleanup efforts in ways that avoid wasted iterations of work. Consultants and other private sector actors can adopt the use of CSM as an engineering best practice not only for their clients facing CERCLA liability and RCRA corrective action responsibility (whether under an order, permit or citizen suit), but can also incorporate it as an essential tool in voluntary cleanups and, proactively, in the transactional due diligence process.

It is best for the private sector to understand and, to the extent appropriate, follow in parallel methods adopted by EPA and state implementing agencies, to anticipate and account for standards that would be enforced against them[2] in a mandatory response scenario or voluntary cleanup approval.

1. See, e.g., "Environmental Cleanup Best Management Practices: Effective Use of the Project Life Cycle Conceptual Site Model" (EPA542-F-11-011, July 2011). https://www.epa.gov/sites/production/files/2015-04/documents/csm-life-cycle-fact-sheet-final.pdf
2. There are strong and obvious parallels between the stages of a CERCLA cleanup, RCRA corrective action, and voluntary investigation and cleanup programs (VCPs), which are also largely paralleled in the transactional due diligence process. For example, the CERCLA Preliminary Assessment (PA) maps onto the RCRA Facility Assessment (RFA), and the VCP/due diligence Phase I Environmental Site Assessment (ESA) (which can go under other names in various State VCPs). The CERCLA RI/FS and EE/CA map onto the RCRA RFI and CMS, the due diligence Phase II and selection of remediation objectives in VCPs. Similar parallels are present regarding later stages (see, e.g., the table included in the U.S. Department of Defense's summary of CERCLA/RCRA integration, reproduced here: https://www7.nau.edu/itep/main/HazSubMap/docs/RCRA-CERCLA/RCRAvsSuperfund.pdf)

Staying Focused, Communicating Clearly

The ideal approach to site investigation provides shared understanding among stakeholders before decisions are made that could be costly and difficult to reverse. The keys to avoiding iterative, wasted effort are 1) avoiding "sport drilling" by focusing the scope of work for investigation on areas of actual concern, based on a fair understanding of a property and its history;[1] and 2) keeping private and public stakeholders informed and on board, seeing and understanding the bases for choices made. The goals of every stakeholder include understanding risk and evaluating how it can be mitigated to a protective end state. Depending on the scenario and who holds the purse strings, cost may become a consideration for some parties, but every stakeholder seeks an expedient and effective remedy that wastes no one's time and effort.

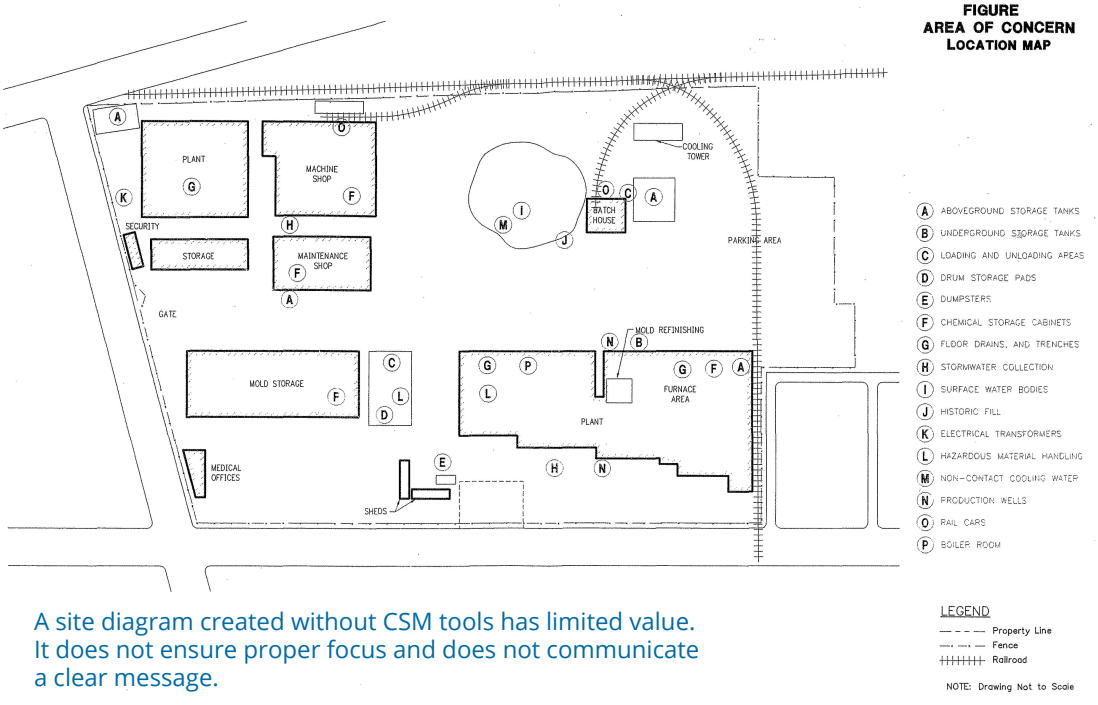
To meet their goals, owners and other stakeholders need precisely focused information that they can understand and use, versus unfocused, general conclusions that risk is present in an area. Regardless of the scenario—proactive due diligence, voluntary cleanup, or mandatory response/corrective actions—the responsible parties always have an audience of multiple stakeholders they must satisfy, in addition to themselves. For transactional due diligence, that could be a seller and a buyer, a lender or other investor; for RCRA and CERCLA sites, it could include EPA, the Army Corps of Engineers, or a state agency, as well as members of the public and citizens groups; and for a voluntary cleanup, there will be a government project manager who must buy into the remediation plan.

1. "Sport drilling" refers to invasive investigation of a property without a clear and rational basis for the number, type and location of sampling points and/or the constituents of concern analyzed. This is in contrast to developing a rational sampling plan, in which a CSM can play an integral role. (Circa 1980s, the phrase "sport drilling" is attributable to friend and former BBJ colleague Dan Elliott, P.G., deceased.)

Ask Any Stakeholder: Seeing Is Believing

CSMs are an essential tool for communicating clearly to all stakeholders the risks that are present at a site and the choices that can be made to address them. To communicate effectively, a CSM can be very simple, or it can go further and take advantage of more cutting-edge techniques for digital rendering of complex data sets. Regardless of the complexity and sophistication, a CSM at its heart is a picture showing sources of contamination, where it is present, and where it is likely to end up, all of which can drive decisions on response actions and help evaluate risks and costs in a due diligence scenario.

The CSM picture by its very nature is—and must be—derived from actual knowledge and sound professional inferences about a site's condition and its history, as documented in a RCRA Facility Assessment (RFA), a Phase I Environmental Site Assessment (ESA) and other available sources. Failure to map investigation and response planning fully and accurately to this available information has been the downfall of many stakeholders in every cleanup and due diligence scenario.



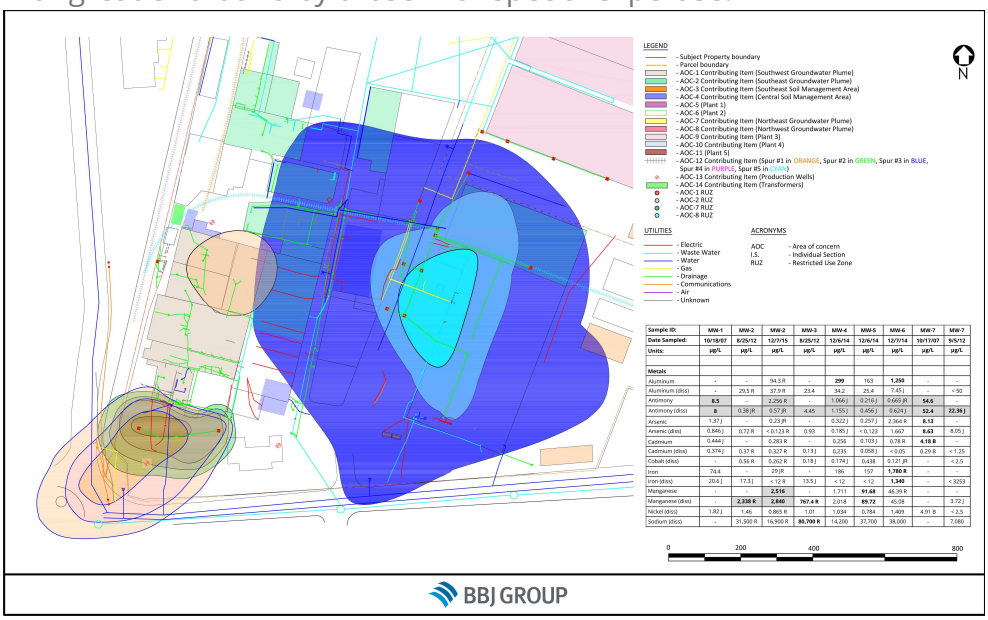
A site diagram created without CSM tools has limited value. It does not ensure proper focus and does not communicate a clear message.

An Evolving Best Practice

CSMs have become an integral tool to keep response actions and due diligence focused on the issues and methods that count—i.e., to avoid the perils of "sport drilling." By their nature, CSMs rely on and require accurate and quantifiable information about a site and data regarding known adverse conditions and inferred future end states (migration of contamination, sensitive receptors, etc.). And, as CSM grows and develops throughout the life of a project, new and better refined data are included (e.g., a plume is demonstrated to be stable, receptor pathways are eliminated, etc.).

With the growing use of the CSM, EPA, state agencies and private sector professionals have created a best practice that benefits all stakeholders by streamlining work, avoiding iterative or wasted efforts, and reducing the time and dollars spent on an investigation or cleanup. And as noted above, those doing proactive due diligence in a transactional setting should model their thinking on the best practices of EPA and others who might eventually drive a CERCLA response or RCRA corrective action or oversee and approve post-closing work under a Voluntary Cleanup Program (VCP).

EPA initially focused on CSMs consisting of flowcharts and simple, static graphical representations that could be generated with 1990s desktop software (or pen and paper). Advances in readily available software and technology have allowed CSMs to blossom into interactive, data-layered and three-dimensional visual models. A modern CSM shows any user, in an instant, information that otherwise could be inferred from reams of data only with great effort and by those with special expertise.



A diagram created with CSM tools provides a focused, sophisticated and readily understood picture of environmental matters.

1. A CSM prepared on behalf of a private responsible party can be invaluable in communicating with regulatory agencies, helping to frame the narrative and gain agency buy-in for a concept or plan in a mandatory response scenario or voluntary cleanup.

Case Study

Conceptual Site Model: Manufacturing Facility

The facility is a large, downtown 120-year-old manufacturing plant. It was located in an area that was home to heavy industry for over a century. Today, property around the site, which is in a state-mandated cleanup program, is mostly used for residential and commercial purposes. The use of CSM was central to the effectiveness and success of this project.

Historical manufacturing operations on the site and surrounding properties impacted soil, groundwater and sediment. Because of the complexity of issues at the site, investigations and corrective actions conducted by multiple consultants over a period of 20 years were deemed insufficient by the state due to inconsistencies in documentation of the areas of concern (AOC).

Rather than continuing to base future actions on disjointed historical investigations that could render an ineffective, fragmented and more costly approach to remediation, a site-wide approach was proposed through the development of a CSM.

The CSM was an interactive representation of the site and surrounding properties that compiled all the information needed to design a focused investigation and remediation strategy. This included information obtained from historical maps and records, environmental reports and surveys, on-site observations, physical setting information on soils, geology and groundwater flow, and current and historical lab data.

Reviewing all of this information concurrently allowed all stakeholders to focus on specific AOCs, contaminants and exposure pathways requiring further investigation or no further action. For example, by reviewing historical maps, sampling and groundwater flow data together in the CSM, the scope of investigation for former operations was narrowed to only a handful of AOCs and relevant, applicable contaminants. Previously, there were more than 100 AOCs identified.

This interactive, visual approach enabled the state authority to easily review and understand the issues at the site and the basis for developing focused corrective measures, eliminating exposure pathways and risks.

Conclusion

EPA has established the CSM as a best practice for CERCLA and RCRA actions, and experience has shown the CSM is invaluable in VCPs, state mandatory programs, and the pre-acquisition due diligence process. The CSM focuses investigation on issues that matter. It avoids costly iterations and deadends. And it provides a crystal clear picture for all stakeholders to understand the risks and the proposed responses.

As CSMs evolve, so too should universal adoption of this powerful tool to frame and solve environmental problems.