

Editor's Perspective—Sustainable Remediation Gains Momentum as SURF Publishes Groundbreaking White Paper

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In this issue of *Remediation*, the entire publication is dedicated to a single white paper, “Integrating Sustainable Principles, Practices, and Metrics Into Remediation Projects,” written by the U.S. Sustainable Remediation Forum, or “SURF.” SURF is an energetic group of volunteers who are passionate about the concept of sustainable remediation. Nearly one-quarter of SURF’s almost 200 members contributed to the white paper—a total of 50 authors. The collaborative effort took a significant amount of time due to the number of contributors, but the end product is a fine opinion piece that will certainly help shape the future of sustainable remediation.

The SURF group, which was founded in 2006, has the following mission statement:

To establish a framework that incorporates sustainable concepts throughout the remedial action process while continuing to provide long-term protection of human health and the environment and achieving public and regulatory acceptance. (Quoted from the white paper introduction)

SURF is composed of leaders in the remediation industry and has representatives from industry, several federal agencies, consulting firms, educational institutions, and state regulators. The group is not formally organized, although it does have some guidelines. Membership is not formal and is voluntary. The group has experienced substantive growth; 22 participants attended the first meeting and, in February 2009, over 65 attendees were present. As the group grew in popularity, the meetings had to be limited due to the inability to find affordable venues and the lack of capability for active participation by all of the meeting attendees. To date, SURF is still an informal group brought together by a common mission, although, given its size, the group may have to become a more formal organization with dues and bylaws. In addition, SURF has developed a Web site, www.sustainableremediation.org, to disseminate information, including the SURF meeting minutes.

As SURF made its way through various meetings (which are cleverly referred to as SURF 1, SURF 2, etc.), the group determined that it was making progress as they delved into their collective understanding of the concept of sustainable remediation and then built a definition of the term for the white paper:

Sustainable remediation is broadly defined as a remedy or combination of remedies whose net benefit on human health and the environment is maximized through the judicious use of limited resources.



SURF identified the benefits and barriers of sustainable remediation and began developing solutions related to enhancing the economic, societal, and environmental benefits to “triple-bottom-line” accounting as applied to remediation. The group realized that sustainable remediation extended far beyond environmental principles and could even require a life-cycle analysis that is more akin to an economic evaluation than the environmental science and engineering that most of the SURF group members practice in their careers as remediation professionals.

At SURF 5 in November 2007, the group decided to spread their message through a white paper. By SURF 6, the white paper had been organized and the SURF authors divided into seven teams, with each team assigned a section of the document. The teams grew as more SURF members volunteered to participate in the white paper preparation.

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After some progress on the white paper had been made, Dave Ellis of DuPont, the chair of SURF, contacted John Wiley & Sons and asked if *Remediation* would be interested in publishing the white paper. At first, Wiley was reluctant to dedicate an entire issue of the journal to a single topic written by a single group. However, after speaking to various SURF members, reading a draft of the introduction, and attending SURF 8, it became apparent that this powerful document could be important to the remediation industry as a whole. Thus, Wiley agreed to dedicate this issue of *Remediation* to the white paper.

The white paper is not intended to be a “cookbook” of how to perform a sustainable remediation project. Instead, it explains the concepts, as determined by SURF, and, most importantly, identifies and discusses, in detail, the potential barriers faced by sustainable remediation. The white paper also provides the current status of sustainable remediation as understood by the SURF members. Unfortunately, due to the various facets of sustainable remediation, it is not an easily engineered scientific solution. As stated earlier, in addition to technical issues, there are economic and societal issues that are complex to apply in a consistent manner. The SURF white paper identifies these issues and offers a framework to overcome the barriers. To provide some flavor of the types of information included in the white paper, summaries of two issues assessed in the document are provided below.

One of the most complicated issues is whether sustainable remediation can be applied within the context of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and state voluntary programs or whether new legislation is required to incorporate sustainable remediation into the remediation process. Obviously, this is a looming issue because amending significant environmental statutes is a complex political undertaking. On the other hand, with respect to CERCLA, the National Contingency Plan requires that nine criteria be evaluated during the feasibility study process, and, without an amendment, sustainable remediation will have to be weaved into these designated criteria. SURF’s white paper lays out options to tackle this and many other difficult regulation-related issues.

Another critical element of sustainable remediation is the need for a standard set of metrics for comparing and selecting remedies and monitoring success. Not long ago, the simple answer to the question of measuring sustainability was “How much carbon does the system use?” However, as SURF identifies in the white paper, the metrics for a truly sustainable remedy extend far beyond carbon and include important elements such as water use, worker safety, community impact, and the net environmental benefit.

In the process of working with SURF on the white paper, SURF and *Remediation* recognized that sustainable remediation concepts and practices will continue to evolve.

Both parties agreed that *Remediation* was an appropriate forum for continued dialogue on the subject. The Sustainable Remediation Panel was born and currently is made up of 12 remediation professionals (listed in Exhibit 1 of the panel's first contribution in this issue). In each issue, the panel will address an interesting question related to sustainable remediation. In this issue, the question is "How should regulatory agencies incorporate sustainable remediation into cleanup programs? Can this be completed within the existing structure of CERCLA, RCRA, and state voluntary programs or would legislation amending the regulations be warranted?" Two members of the panel agreed to address these questions and write responses, which are included at the end of this issue.

Remediation is proud to be affiliated with SURF and appreciates the opportunity to publish the white paper. Clearly, this publication provides a pathway for regulatory agencies and other various stakeholder groups to begin incorporating the important elements of sustainability into remediation projects.

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