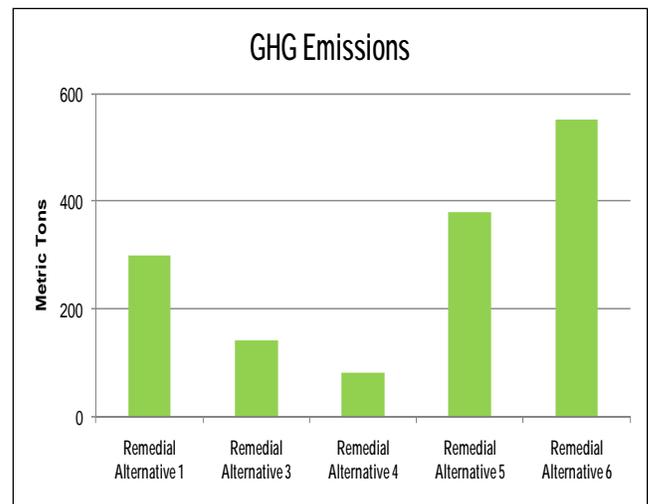


Green & Sustainable Remediation - SiteWise™ 3.0

Technology Description

SiteWise™ 3.0 is an Excel-based calculation tool designed to determine footprints of environmental restoration actions in terms of selected metrics such as greenhouse gas (GHG) emissions, energy consumption, criteria air pollutant emissions, water consumption, and worker safety. The remedy footprints for these metrics provide a measure of the unintended impacts of remediation. The Navy remedial project managers (RPMs) use the footprint analysis results to reduce the remedy footprints by selecting green and sustainable remedies and by implementing best management practices.

SiteWise™ was developed jointly by the Navy, Army, Army Corps of Engineers, and Battelle Memorial Institute. In FY2013, EXWC completed a demonstration/validation (dem/val) project funded by the DoD Environmental Security Certification Program (ESTCP) that performed footprint analysis for selected DoD remediation sites. The project benchmarked results from SiteWise™ against a commercially available dedicated Life Cycle Assessment (LCA) software and database package. From the comparison results, the project team identified gaps in the functionality for SiteWise™ 2.0 and subsequently implemented recommended improvements. SiteWise™ 3.0 improvements included both the calculation of footprints and the usability of the tool. As concluded from the ESTCP project, SiteWise™ 3.0 provides the necessary information needed for comparing remedy alternatives and making remedy decisions.



SiteWise™ 3.0 output example - comparison of GHG footprint for remediation alternatives

Value to the Warfighter

Remediation of contaminated groundwater and soil at Navy Environmental Restoration (ER) sites is required under various federal and State regulations. SiteWise™ 3.0 enables the Navy to perform footprint analysis that help decision makers in selecting remediation technologies with smaller footprint (e.g., reduced energy consumption) for remediation systems. Reduced energy consumption by an installation results in a cost-savings that can be re-directed to the Warfighter.

Economics of the Technology: ROI or Payback

SiteWise™ 3.0 has distinct economic advantages in comparison to applying the dedicated LCA software for footprint analysis. SiteWise™ 3.0 is available to remedial project managers (RPMs) free of cost; whereas, the LCA software could cost up to \$12K. In addition, SiteWise™ 3.0 is Excel based and thus requires only minor training; however, the LCA software requires extensive training with potential training cost up to \$8K. For a site application, SiteWise™ 3.0 is expected to cost \$3K - \$10K; whereas, the LCA application is estimated at \$5K - \$15K for the same site.

Technology Transition Documentation

Technology Transition Category 4.

SiteWise™ 3.0 and the User Guide are available from the NAVFAC portal at:
<https://portal.navy.mil/portal/page/portal/centers/nfesc/erbsec/opt>

The final project report CR-NAVFAC-EXWC-EV-1303, July 2013 provides details about the ESTCP project. The report has been submitted to ESTCP for posting to the public web site.

Site Implementation

Remedy footprint analysis using SiteWise™ is required by the DON Policy for Optimizing Remedial and Removal Actions at all DON Environmental Restoration Program Sites. RPMs are instructed to incorporate metrics from the SiteWise™ analysis into the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedy Evaluation Criteria.

SiteWise™ has been applied to numerous sites within the Navy ER Program, as well as by other agencies, including the EPA, state agencies, and various other parties responsible for site cleanup. Remedy footprint analysis is routinely applied at the DON ER sites for comparing footprint of alternative environmental remedies. From a recent survey of 148 respondents, 80 (54%) had performed a GSR evaluation at a Navy site. With the recent availability of SiteWise™ 3.0 and the User Guide, application of SiteWise™ 3.0 is expected for all footprint analysis applications at ER sites.

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