

How to Avoid “Kick the Can”: Get More Out of Your Annual Performance Assessments

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Background/Objectives. Many remediation projects regularly assess project performance. Some will consider these assessments “Optimization Light” activities. To provide more consistency in the application of the tenets of optimization, different organizations and industry groups have developed optimization guidance documents. Most of these documents were developed more than 10 years ago. While optimization processes have become standardized, many optimization and project performance evaluation teams overlook several important questions, such as:

1. How much additional mass (contaminant or concentration) removal is required to achieve remediation goals?
2. What is the timeline for reaching contaminant reduction milestones leading to a transition point and achieving cleanup goals?
3. What is the ratio of annual operations and maintenance spending to annual change in the life cycle project forecast?

This presentation will present an overview of the relevance of these questions in assessing annual performance evaluations and optimization projects. As the quality and quantity of information varies for different sites, it is important to know that all the questions cannot be answered, and the degree of confidence in the answers will vary.

Approaches and Activities: Data from published and un-published sources will be presented to represent typical approaches used to present project performance. Typical barriers to addressing the above questions are presented, along with potential solutions that can better help answer the question and qualify the confidence related to the question. A project example at a complex site is evaluated to highlight how uncertainty in contaminant mass can be addressed. Where existing conceptual site model information is driving high uncertainty and prevents decision making, a value-of-information approach is presented to assess the benefit of collecting additional data. A decision flow chart is presented to help optimization practitioners navigate the challenge of the above questions along with a graphical approach that can be used to communicate confidence in optimization decisions.

Results/Lessons Learned: Typical post-remedy monitoring projects only monitor how the remedy is progressing but do not mine existing data or collect additional information that can be used to improve the remedy. Many project sites don't update time of remediation estimates presented in the feasibility study or Record of Decisions. The industry is more focused on assessing concentration changes rather than mass changes. A qualitative statement about the adequacy of current performance is used to project future performance, and lacks quantitation to represent meaningfulness. Cost and performance information is usually separate from annual report assessments, so the question number 3 is rarely asked. While generating mass estimates can be challenging, they can be represented with uncertainty to allow decision makers the ability to understand the conditions of which favorable and unfavorable investments could be made. All of these findings represent challenges in making optimization decisions. The decision flow chart and graphical presentation presented will help project decision makers understand when they are “kicking the can”, making progress, or lack appropriate information for good return-on-investment decision making.