

Scope of Work

Development of Water Quality Based Benchmarks

Oregon DEQ Industrial Stormwater Permits

Background:

The Oregon Department of Environmental Quality is revising its industrial stormwater general permits (Nos. 1200-Z and 1200-COLS permits). To assist with this endeavor, DEQ has convened an advisory committee comprised of representatives of affected industries, small businesses, municipalities, environmental groups and others concerned about discharges to state waters. Since June 2009, DEQ has held six advisory committee meetings. Based on feedback from the committee and DEQ regional managers, DEQ is proposing to develop benchmarks for three metals (copper, lead and zinc) based on Oregon's surface water quality characteristics and the potential of stormwater runoff to result in an exceedance of instream water quality standards. Characterizing surface water quality will involve statistical analysis of representative receiving water conditions, translator values for dissolved metals and representative hardness of the receiving waters.

Scope of Work:

This scope of work includes a discussion of the tasks and sub-tasks, deliverables, and a schedule associated with this project.

Task 1: Review and evaluate existing water quality data on the state's receiving waters.

Timeline: 2 months.

- Sub task: Conduct queries of DEQ's Laboratory Analytical Storage and Retrieval (LASAR) database to gather information on the representative background concentrations and hardness in the receiving waters. Evaluate whether data is available to characterize surface water quality at a watershed scale or a larger regional scale such as Western and Eastern Oregon. Determine if data needs additional quality assurance/quality control (QA/QC) review. Establish criteria to be used to screen out data associated with unique, site specific characteristics that may not be representative of the state's receiving waters.

Task 2: Conduct risk based analysis. Timeline: 5 months (depending on statistical software and dilution model available, additional time may be necessary)

- Sub task: Identify approaches for determining dilution rates (i.e., representative dilution rate for whole state or watershed specific dilution rate). Evaluate the feasibility of each approach and present the results to DEQ and the committee before running a dilution model. Evaluate ability to correlate various dilution rates with actual flow characteristics during typical storm events.
- Sub task: Determine approach for developing translator values for estimating dissolved metal concentrations from total metal concentrations.
- Sub task: Run dilution model that consider the following inputs:
 - Representative receiving water conditions

- Translator values for estimating dissolved metal concentrations from total metal concentrations
- Hardness dependent water quality standards
- Sub task: Develop probability distributions (i.e. risk curves) that describe the probability of exceeding water quality standards versus incremental increases in stormwater pollutant concentrations. The probability distributions will be based on model outputs.

Task 3: Reporting and presenting the analysis results (3 months)

- Sub task: Summarize results of analysis in technical memorandum to DEQ. The memorandum will include methods for this analysis, histograms showing frequency distributions of background water quality data and summaries and graphs showing the probability of exceeding water standards given dilution rates and proposed benchmarks. Share the draft memorandum with DEQ and the committee.
- Sub task: Present the results of analysis at a committee meeting held at DEQ's Headquarters office Portland. To facilitate the discussion, prepare a powerpoint presentation on the information presented in the draft technical memorandum.
- Sub task: Prepare a final memorandum based on comments from DEQ and the committee.

Deliverables:

- Submit draft technical memorandum to DEQ within two weeks of finalizing the analysis.
- The draft technical memorandum will be revised once based on comments from DEQ and the committee. DEQ will consolidate comments on the memorandum and provide them to the contractor within six weeks of receiving the draft. DEQ and the contractor may meet once during this time.
- The final technical memorandum will be submitted to DEQ within two weeks of receiving comments on the draft version.

Estimated Contract Term: 10 months

Estimated Contract Cost: \$30,000