

Focus on: Statewide Effluent Characterization Concrete Manufacturing and Recycling

Summary of the Study

Ecology is conducting a study to understand the pollutants discharging from concrete manufacturing and concrete recycling facilities. Results of this study will inform the development of the draft Sand & Gravel General Permit (Permit).

Study Scope & Procedures

Ecology identified 229 study eligible permitted facilities statewide. Please see “Why was my facility selected” for criteria. Ecology randomly selected 80 of these facilities to collect discharge samples.

Ecology will conduct two seasonal sampling events corresponding with the annual “wet” and “dry” seasons. Each sample will be evaluated for various field parameters, such as pH, turbidity, dissolved oxygen, and others.

Our Manchester Environmental Laboratory will analyze the samples to determine concentrations of the following metals: antimony, arsenic, barium, chromium, copper, lead, manganese, mercury, nickel, selenium, sulfur (as sulfate), and zinc.

Please see the [Quality Assurance Project Plan](#) for sampling and quality assurance procedure details.



[Ecology's literature review
on Recycled Concrete
Aggregate Leachate](#)

[Quality Assurance Project Plan:
Concrete Manufacturing and
Recycling Effluent Characterization](#)



Why was my facility selected?

Ecology's criteria for sampling includes the following:

- ❖ Hold an active Permit for a fixed site facility.
- ❖ Conduct at least one concrete related industrial activity.
- ❖ Discharge stormwater and/or wastewater to groundwater or surface waters.
- ❖ Monitor discharges to groundwater at a pond, lagoon, or other lined impoundment or at a piped or ditched outfall to a surface water.

What this means for Permit development

Ecology will publish the results of the study as a technical report in early 2025. The report will help inform our development of draft permit changes before the Sand & Gravel General Permit expires March 31, 2026.

Based on the study findings, Ecology will evaluate the existing permit conditions and establish a path for achieving compliance with the State's water quality criteria. This is a deliberative effort between Ecology, the permittees, and other stakeholders. There will be opportunity to comment before any permit decision is final.

Background

Ecology's 2022 literature review identified a list of potential pollutants but did not have any data from Washington facilities. Also, since these contaminants are potentially found in recycled concrete products, we designed this study to determine what pollutants could be generated at both concrete manufacturing and recycling facilities in Washington.



Infiltration pond for treated concrete wastewater.

Frequently asked questions (FAQs)

Will I be able to view the sample results from my facility?

Yes! Ecology will provide a facility participating in the study with their sampling results.

Can any of the findings from this study be used as supporting evidence for formal or informal enforcement from Ecology?

The purpose of the study is to improve Ecology's understanding of discharges at concrete manufacturing and recycling facilities. Ecology does not intend to pursue site-specific compliance and enforcement activities.

However, if a sample result does exceed water quality criteria, and the facility hasn't already elected to receive their results, we will notify the facility of the results.

Why should I participate?

The more facilities that participate in the study, the more representative the effluent characterization, which will enable Ecology to develop the permit based on realistic site conditions rather than an overly cautious approach.

Can I deny Ecology from sampling at my facility?

The Permit requires permittees to allow Ecology personnel on-site at reasonable times to sample or monitor for the purposes of assuring permit compliance or as otherwise authorized under the Clean Water Act.

While this is true, if a good-faith resolution cannot be made between Ecology and the facility staff, Ecology will vacate the site.

Where will Ecology collect water samples?

Sample collection will typically occur at an existing monitoring point that the facility has identified as representative of discharges associated with concrete-related activities.

Ecology may collect samples at an alternate location if the existing monitoring point is not representative or if staff observe a more representative location that collects or discharges concrete-related wastewater.

Ecology staff collecting the sample will communicate any deviations during the sampling event to the facility staff.

What is the difference between leachate and stormwater?

The Permit defines *leachate* as water or other liquid that has percolated through raw material, finished products, or waste and contains new dissolved or suspended substances after contacting these materials.

The Permit defines *stormwater* as any rainfall or snow meltwater. Stormwater alone may not contain any additional constituents concerning for water quality, whereas leachate may. Leachate and stormwater runoff often commingle at Sand and Gravel facilities, which is why Ecology seeks to better understand leachate chemistry.

Contact information

For further questions, email Ecology's Water Quality Program Headquarters at:

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To request ADA accommodation, visit <https://ecology.wa.gov/accessibility>, call Ecology at 360-407-6831, Relay Service 711, or TTY 877-833-6341.