WASHINGTON STATE DEPARTMENT OF ECOLOGY

September 2025

CONDITIONAL USE LEVEL DESIGNATION FOR BASIC (TSS) AND PHOSPHORUS TREATMENT

For

Atlan Stormwater
ATLAN FlowFilter

Ecology's Decision

Based on the Atlan Stormwater (Atlan) application submissions for the ATLAN FlowFilter, Ecology hereby issues the following use level designation:

1) Conditional Use Level Designation (CULD) for Basic and Phosphorus Treatment
   - Sized at a hydraulic loading rate of 4.0 liters per second (L/s) (63.4 gpm) per cartridge
2) Maintenance data collected during the initial TAPE GULD testing and the post GULD maintenance assessment demonstrated the system as able to treat the following percentage of a water year before needing maintenance:

	Site Location	Land Use	Average TSS (mg/L)	D_{50} PSD (µm)	Maintenance Cycle[1] (% water year)
GULD Testing[2]					
Maintenance[3] Assessment					

[1] Ecology recommends considering maintenance cycle information when sizing the system. Sizing may need to be increased to meet the project, permit, or jurisdiction maintenance cycle.
[2] GULD testing has not yet been completed.
[3] Maintenance assessment data will be collected after the ATLAN FlowFilter receives the GULD.

3) Ecology approves the ATLAN FlowFilter for treatment at the above flow rates. The designer shall calculate the water quality design flow rates using the following procedures:
   - Western Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using the latest version of the Western Washington Hydrology Model or other Ecology- approved continuous runoff model and as described in section III-2.6 of the Stormwater Management Manual for Western Washington (SWMMWW).
   - Eastern Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using one of the three methods described in Chapter 6.5.1 of the Stormwater Management Manual for Eastern Washington (SWMMEW) or local manual.

- Entire State: For treatment installed downstream of detention, the water quality design flow rate is the full 2-year release rate of the detention facility.

4) The Use Level Designation expires on September 30, 2029, unless extended by Ecology, and is subject to the conditions specified below.

Ecology's Conditions of Use

The ATLAN FlowFilter shall comply with these conditions:

1) Applicants shall design, assemble, install, operate, and maintain the ATLAN FlowFilter in accordance with Atlan design criteria and the Ecology Decision.
2) ATLAN FlowFilter design shall conform to the specifications submitted to and approved by Ecology.
3) Install the ATLAN FlowFilter in such a manner that you bypass flows exceeding the maximum operating rate and you will not resuspend captured sediment.
4) Atlan commits to submitting a QAPP for Ecology approval by April 30, 2026 that meets TAPE requirements for attaining a GULD for Basic and Phosphorus Treatment.
5) Atlan shall complete all required testing and submit a TER for Ecology review by June 30, 2029.
6) Atlan may request Ecology to grant a deadline or expiration date extension, upon showing cause for such extensions.
7) Discharges from the ATLAN FlowFilter shall not cause or contribute to water quality standards violations in receiving waters.

Applicant:	Atlan Stormwater
Applicant's Address:	130 Sandstone Place, Parkinson QLD 4115 Australia

Application Documents:

Emerging Stormwater Treatment Technologies Application for Certification: ATLAN FlowFilter, May 2025

ATLAN Stormwater Field Monitoring of ATLAN FlowFilter System, Summary Submission for Washington Department of Ecology TAPE Program, April 2025

Atlan FlowFilter, SQIDEP Independent Evaluators Joint Report, August 2024

Atlan Stormwater Costco FlowFilter Hydraulic Performance (Treatable Flowrate) Lab Testing Report June 2024

Field Monitoring of Atlan FlowFilter, SQIDEP Body of Evidence Submission, January 2024

Performance Testing of a SPEL Hydrosystem, UNSW Sydney School of Civil and Environmental Engineering Water Research Laboratory, February 2020

Applicant's Use Level Request:

- Conditional Use Level Designation as a Basic and Phosphorus Treatment device in accordance with Ecology's *Stormwater Management Manual for Western Washington.*

Applicant's Performance Claims:

Based on laboratory and field testing at treatment flow rates outlined in the Ecology Decision #1, the ATLAN FlowFilter will meet TAPE performance goals for TSS and total phosphorus.

Ecology's Recommendations:

Ecology finds that:

- Atlan Stormwater qualifies for the opportunity to demonstrate, through field-testing in the Pacific Northwest or at an approved TAPE testing facility, whether the ATLAN FlowFilter can attain Ecology's Basic and Phosphorus treatment goals at a treatment flow rate outlined in Ecology Decision #1.

Findings of Fact:

Field Testing

- The ATLAN FlowFilter (formerly known as SPEL Hydrosystem) was tested by Drapper Environmental Consultants in accordance with Stormwater Australia Stormwater Quality Improvement Device Evaluation Protocol (SQIDEP) Guidelines at a Costco in Victoria, Australia. The test was done at the treatment flow rate of 4 liters per second (L/s) per cartridge.
- The testing was completed on an ATLAN FlowFilter system that contained 7 cartridges between April 2022 and May 2023. Compliant flow weighted composite samples were collected during 44 events for TSS and total phosphorus.
    - Influent TSS concentrations ranged from 5 mg/L to 9260 mg/L with a mean concentration of 616 mg/L and a median concentration of 262 mg/L. Influent concentrations greater than 200 mg/L, the upper limit of the TAPE allowed influent range, were capped at 200 mg/L before calculating pollutant removal. After capping the influent concentrations at 200 mg/L and excluding samples with influent concentrations below 20 mg/L (the lower end of the TAPE range) the average TSS reduction was 88 percent.
    - Influent total phosphorus concentrations ranged from 0.01 mg/L to 1.24 mg/L with a mean concentration of 0.41 mg/L and a median concentration of 0.34 mg/L. Influent concentrations greater than 0.5 mg/L, the upper limit of the TAPE allowed influent range, were capped at 0.5 mg/L before calculating pollutant removal. After capping the influent concentrations and excluding samples with influent concentrations lower 0.1 mg/L (the lower end of the TAPE range) the average total phosphorus reduction was 89 percent.

Lab Testing

- An ATLAN FlowFilter was tested by Water Research Laboratory (WRL) of the School of Civil and Environmental Engineering at UNSW Sydney in 2019.
- The testing evaluated a full-scale, commercially available ATLAN FlowFilter. Testing included a series of five tests across three flow rates and three concentrations. The tested flow rates were 12 L/s, 6 L/s, and 3 L/s. The test sediment had an average d50 of approximately 60 µm.
- Influent TSS concentration ranged from 33 to 812 mg/L, with a mean concentration of 258 mg/L and a median concentration of 181 mg/L. For samples with an influent concentration between 20 mg/L and 100 mg/L the mean effluent concentration was 17 mg/L. For samples with an influent concentration greater than 100 mg/L the mean removal efficiency was 82 percent. When capping influent concentration at 200 mg/L the mean removal efficiency was 74 percent.
- Influent total phosphorus ranged from 0.08 and 0.93 mg/L, with a mean concentration of 0.39 mg/L and a median concentration of 0.34 mg/L. For samples with an influent concentration greater than 0.1 mg/L the mean removal efficiency was 59 percent. When capping influent concentration at 0.5 mg/L the mean removal efficiency was 56 percent.

Other ATLAN FlowFilter matters Ecology recommends be addressed by the Company:

1. Test the system under normal operating conditions, such that pollutants partially fill the system. Results obtained for "clean" systems may not be representative of typical performance.
2. Conduct field-testing at a site that is indicative of the treatment goals.
3. Conduct testing to obtain information about maintenance requirements in order to come up with a maintenance cycle.

Technology Description:

https://atlanstormwater.com/au/atlan-filter/

Contact Information:

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Applicant website: https://atlanstormwater.com/au/

Ecology web link: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

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Revision History

Date	Revision
September 2025	CULD granted for Basic and Phosphorus Treatment