An aerial photograph of a water treatment facility. In the foreground, a large, dark blue pond contains several rectangular wooden rafts. The rafts are made of dark wood and are arranged in a grid-like pattern. The pond is surrounded by a grassy area and a fence. In the background, there are trees and a large, multi-story building under construction. The sky is overcast.

Testing 6PPD-Q on the Snoqualmie Indian Tribe Reservation

Jen Hartke and Kelsey Payne

Water Quality Program

Snoqualmie Indian Tribe

SWG 6PPD Subgroup 6/04/2025



Snoqualmie Tribe and Salmon





Snoqualmie Tribe and Aquatic Habitats



Snoqualmie Reservation and Stormwater





Bioswales



Floating Treatment Wetlands



Pilot study questions:

How does the Snoqualmie Reservation contribute to 6PPD?

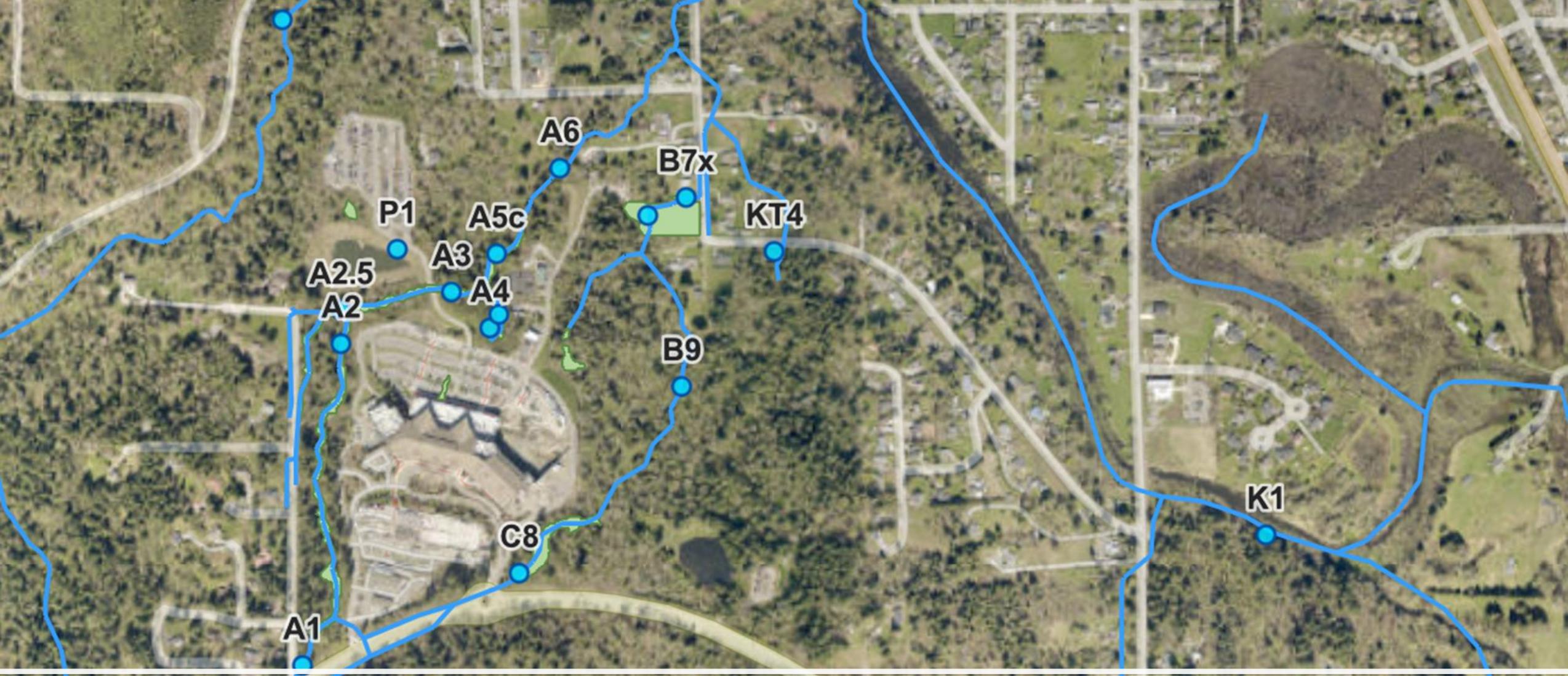


Is the Green Stormwater Infrastructure on the Reservation helping to reduce 6PPD?

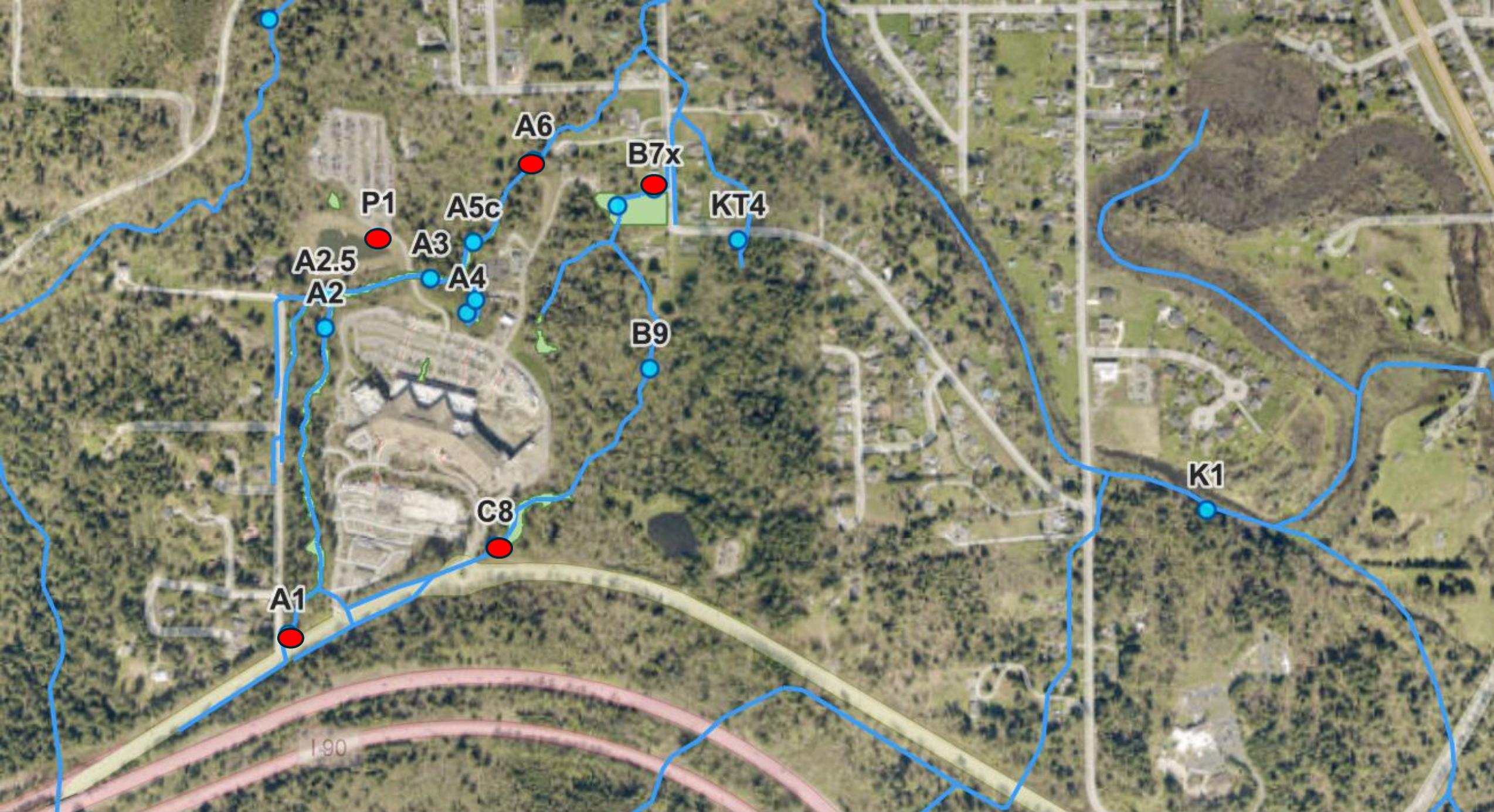


Does water leaving the Reservation meet accepted water quality standards?

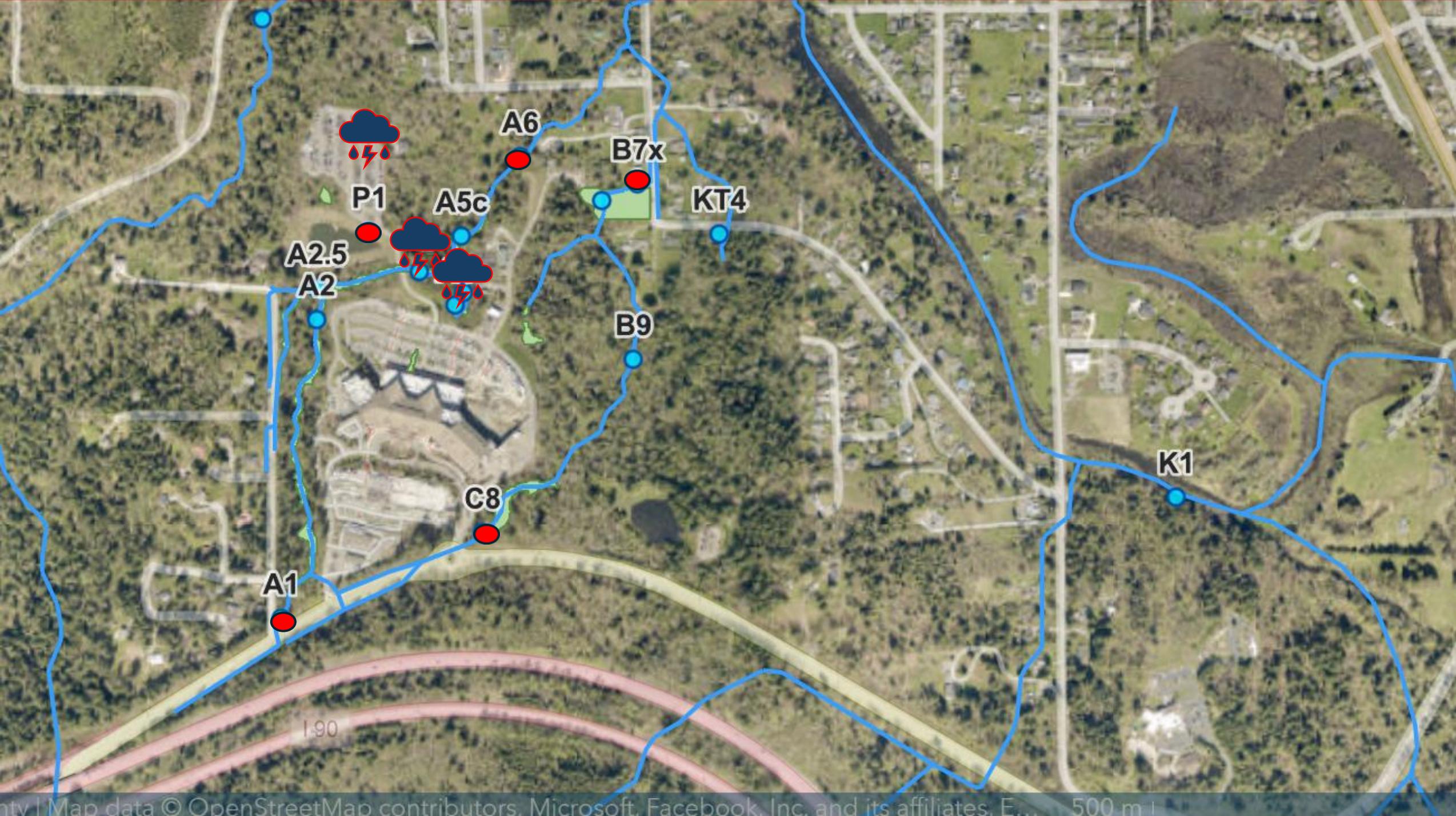




Study Design Locations









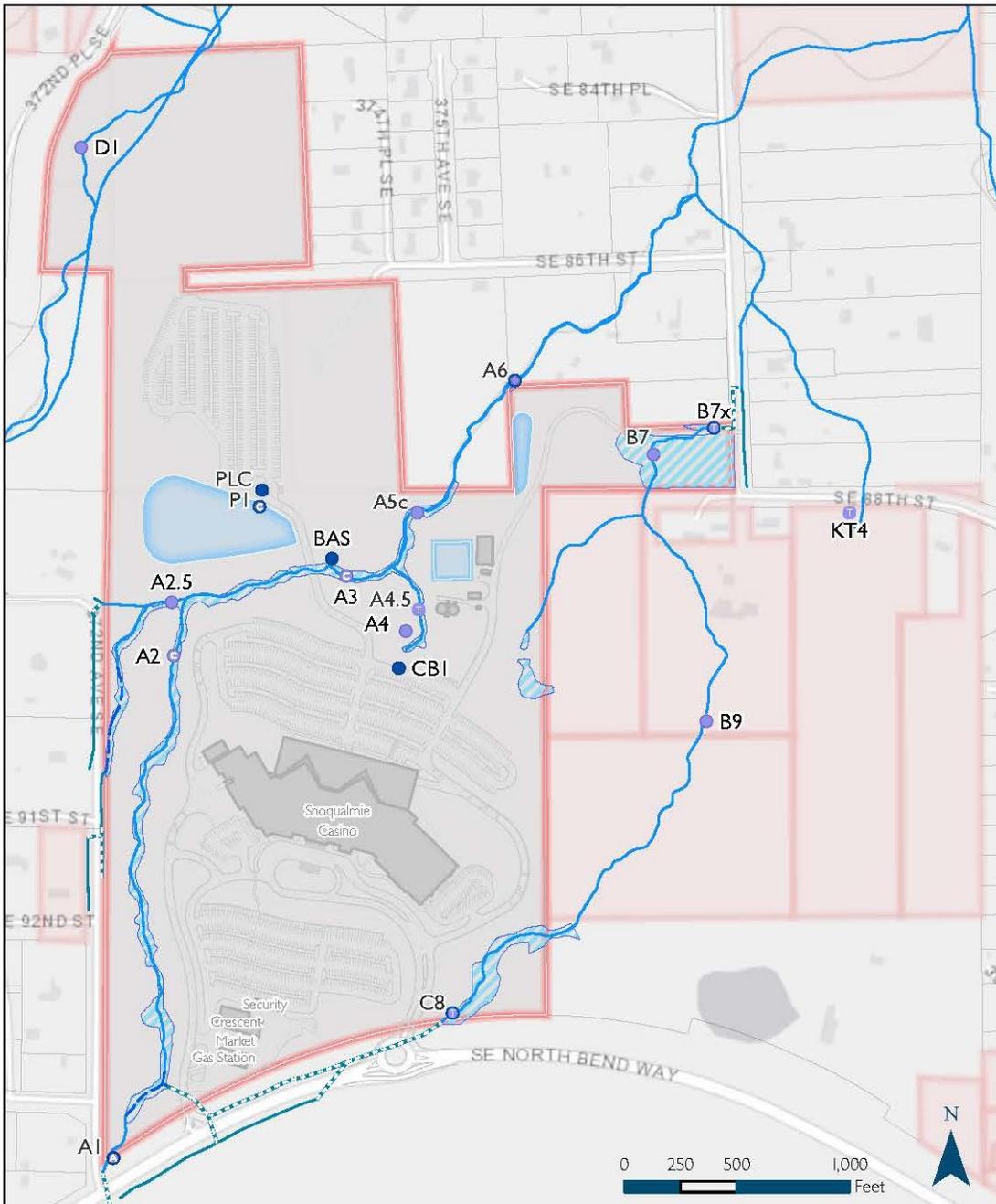
Study Design-Locations

- Stream A

- A1= entering Reservation, runoff from North Bend Way
- PLC = bioswale accumulation
- P1= stormwater pond
- BAS = outfall below stormwater pond
- CB1 = catch basin below upper parking lot
- A6 = leaving Reservation

- Stream B

- C8 = entering Reservation, runoff from North Bend Way
- B7x = leaving Reservation





Study Design- Sampling Methods

Study Design-Sampling Methods

- Quality Assurance Project Plan

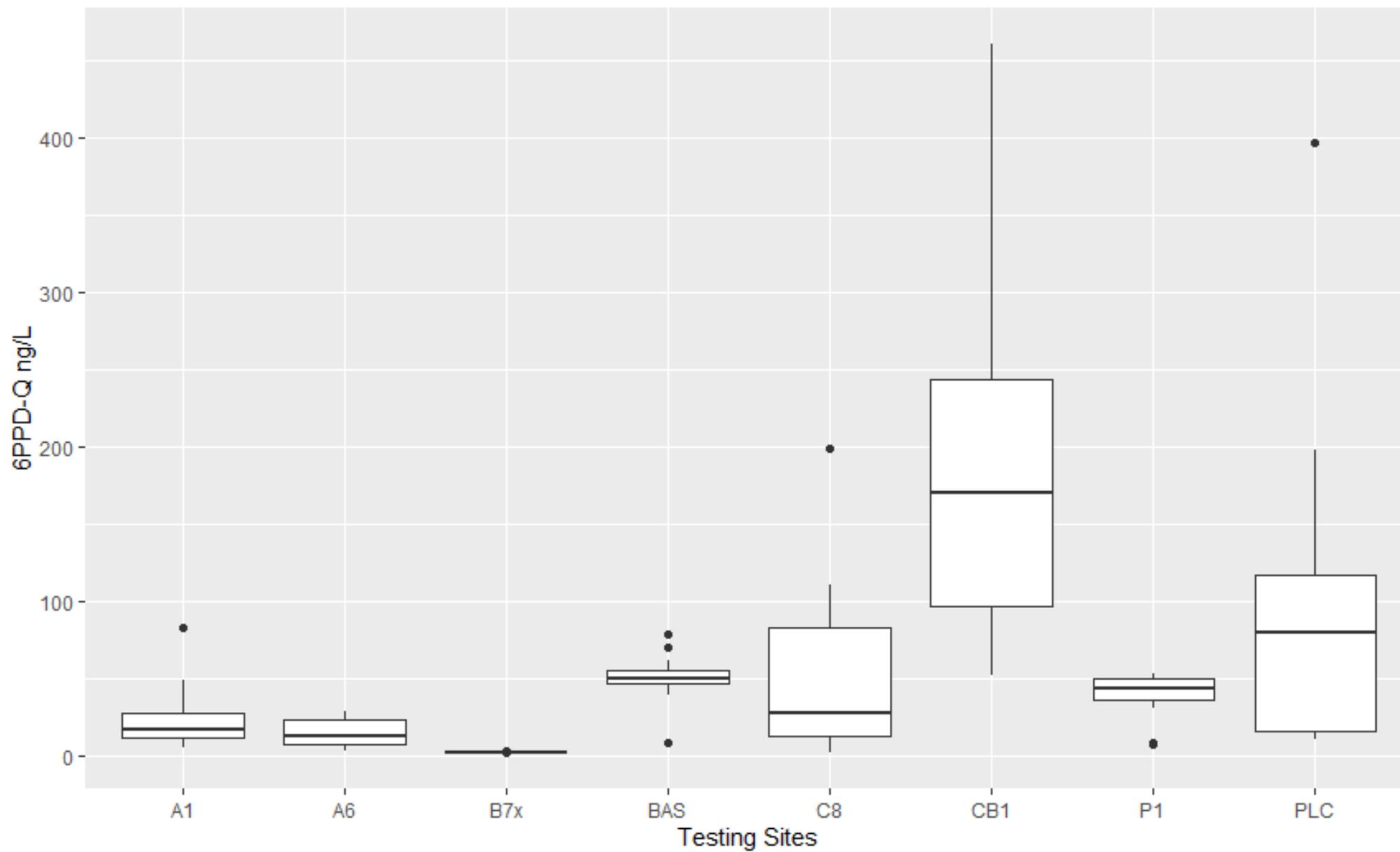
Rain Event Considerations	Quantitative
Minimum Amount of Rainfall	> 0.2 inches, no maximum
Rainfall Duration	1 hour minimum
Sampling Period	One sample at the beginning of storm event (within 4 hours) and following sample (within 4 hours of initial sample).

Results-Rain Events

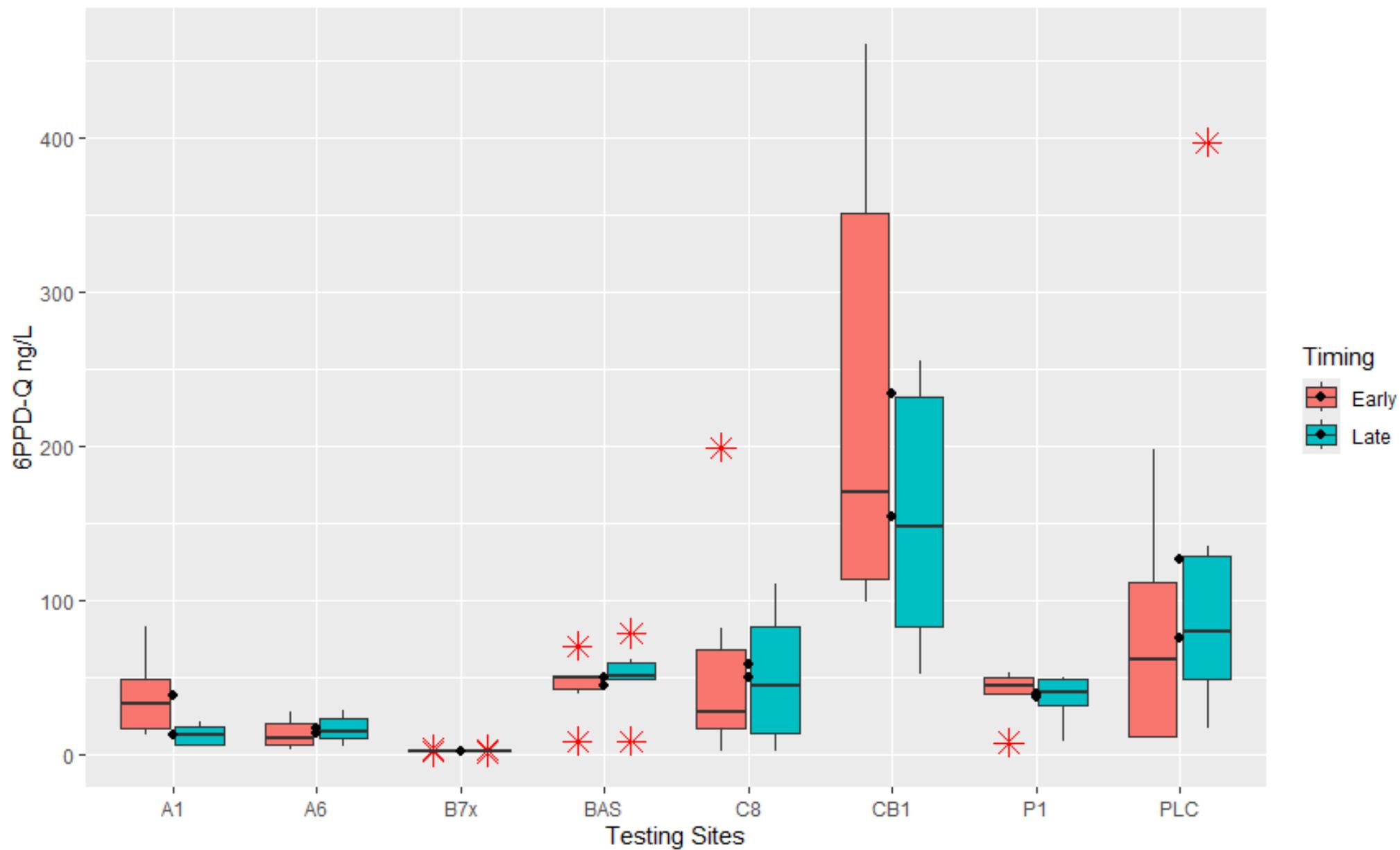
Date of Event	Amount of Rainfall	Met QAPP Requirements?
10/04/2024	0.34 in	Yes
10/30/2024	0.23 in	Yes
12/13/2024	0.57 in	Yes
01/03/2025	0.35 in	30 min outside of first sampling window
01/10/2025	0.61 in	10 min outside of first sampling window
02/24/2025	0.16 in	0.04 in less than ideal rainstorm

* Additional sampling taken 04/29/2025 within 12 hours of a rain event

6PDD results during rain event.



6PPD-Q results during rain event.



Pilot study questions:

How does the Snoqualmie Reservation contribute to 6PPD? Inputs of 6PPD detected

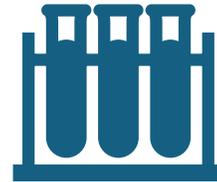
Is the Green Stormwater Infrastructure on the Reservation helping to reduce 6PPD? Yes

Does water leaving the Reservation meet accepted water quality standards? For the most part!

Lessons Learned



Recommend looking for alternatives to storm chasing



Work closely with the lab



Future Work



Hope to continue working on 6PPD. May look at alternative sampling methods.

Look further, how is vegetation in green stormwater infrastructure taking up 6PPD?



How might retrofits to our green infrastructure increase management of 6PPD?





Thank you

- Funding through Department of Ecology Interagency Agreement, special thanks to Madison Bristol
- Peers at the Snoqualmie Tribe for supporting our work



DEPARTMENT OF
ECOLOGY
State of Washington



Questions?