

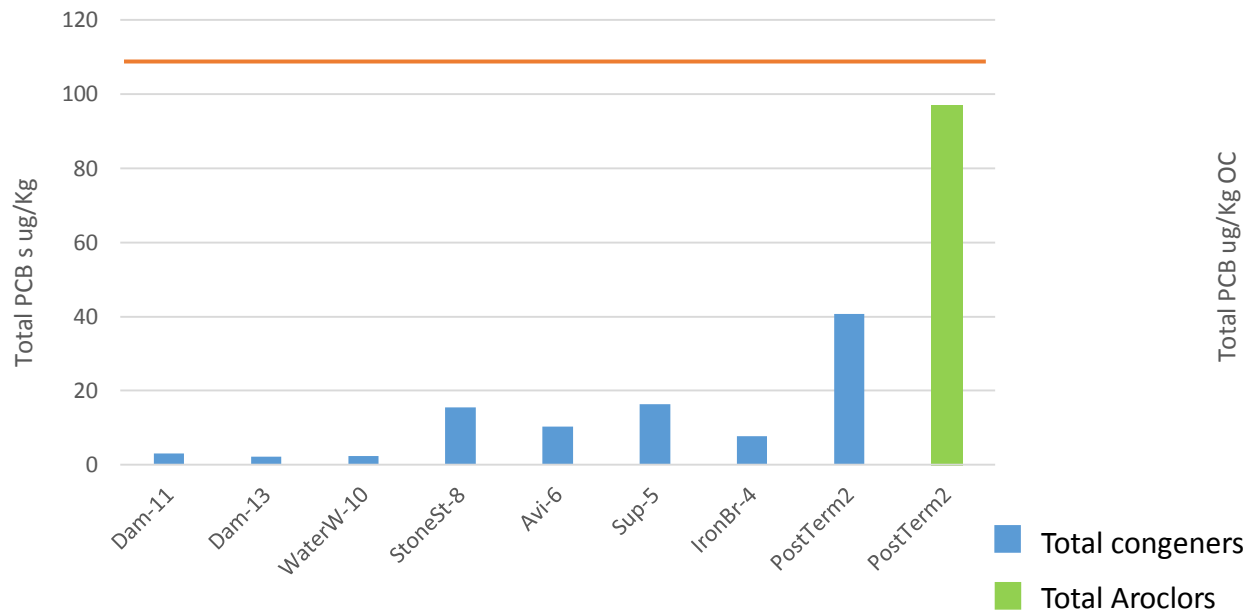
Urban Waters Sediment and Groundwater Seep Data

(Data summarized by Brandee Era-Miller, Environmental Assessment Program, Toxics Studies Unit)

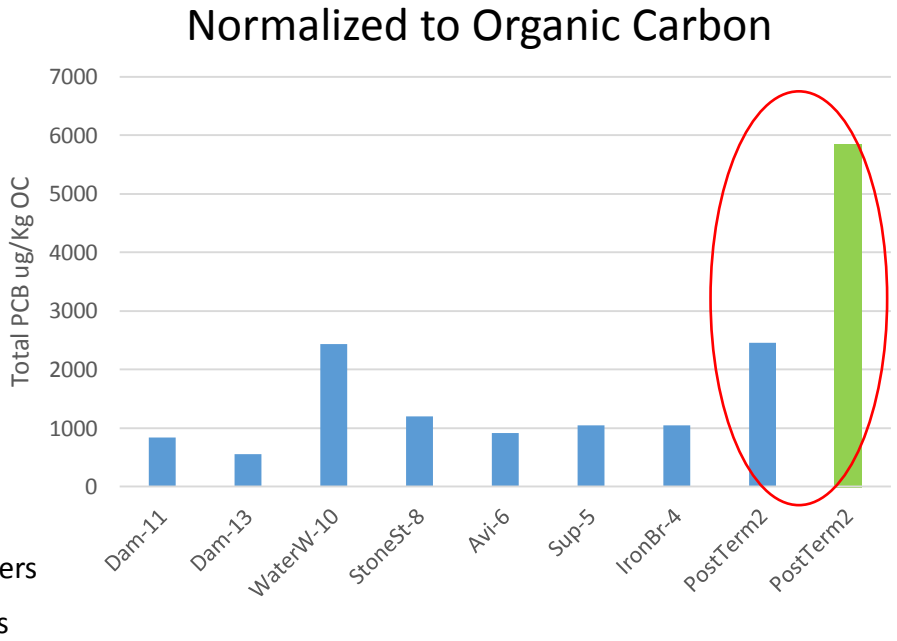
- Samples collected by Ecology Urban Waters Program staff in late August 2013
- Analyzed for PCB Congeners (1668C) and PBDEs (1614) by Pacific Rim Lab
- Only totals for PCB congeners presented here
- Small data set:
 - Sediments at 8 locations
 - Groundwater seeps at 2 locations
- Data QA/QC review by Karin Feddersen of MEL and Brandee Era-Miller
- PCB congeners censored as not detected using 3x blank rule (conc. < 3x blank)
- NJ qualified data were not used for calculating totals
- Project Data to be entered into Ecology's EIM database in late 2015 under EIM Study ID: SRUW-Spokane.



Sediment - PCBs

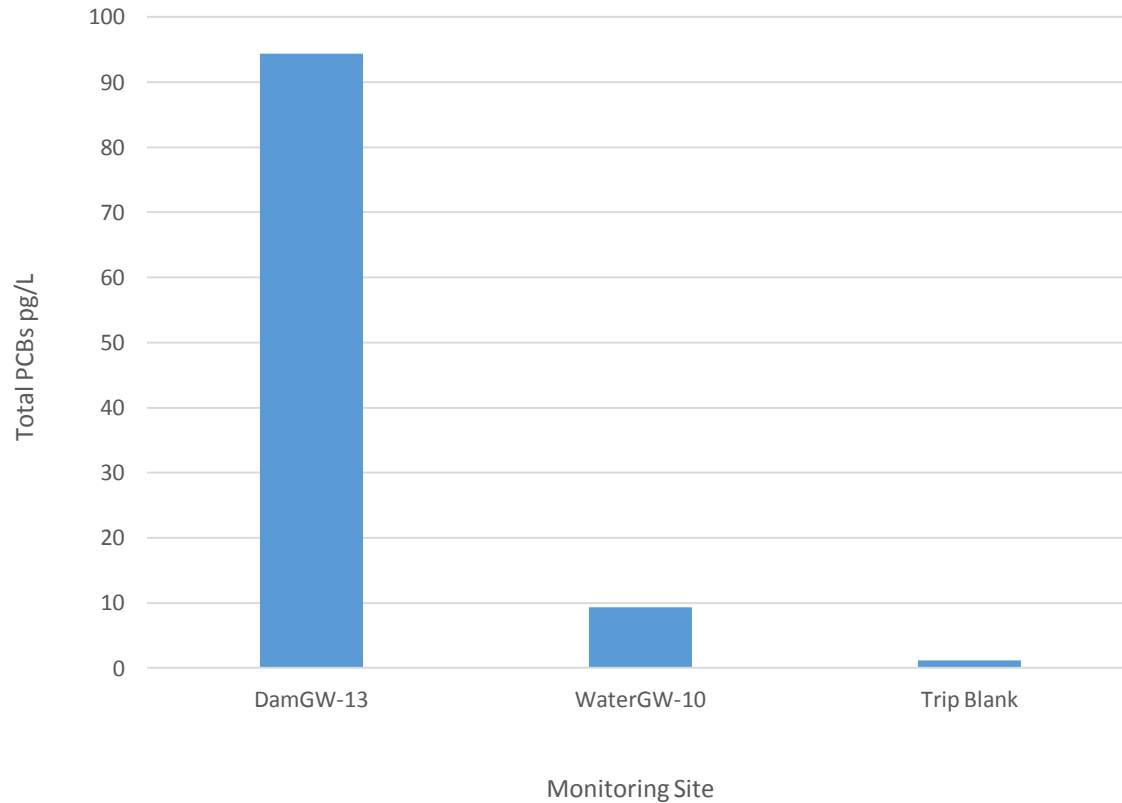


WA State Sediment Management Standards
for Freshwater Sediments
Sediment Cleanup Objective =
110 ug/Kg Total PCBs (Aroclors)



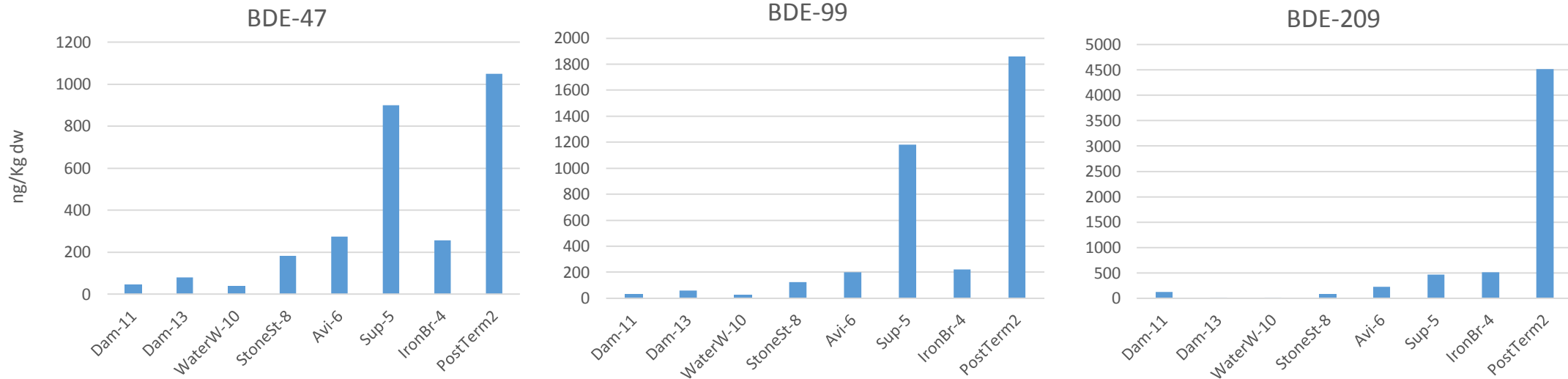
Normalizing PCBs to organic carbon shows
that the pattern of higher PCBs at PostTerm2
is real. Normalizing PCBs to percent fines
(silt + clay) did not change this pattern either.

Groundwater Seep - PCBs



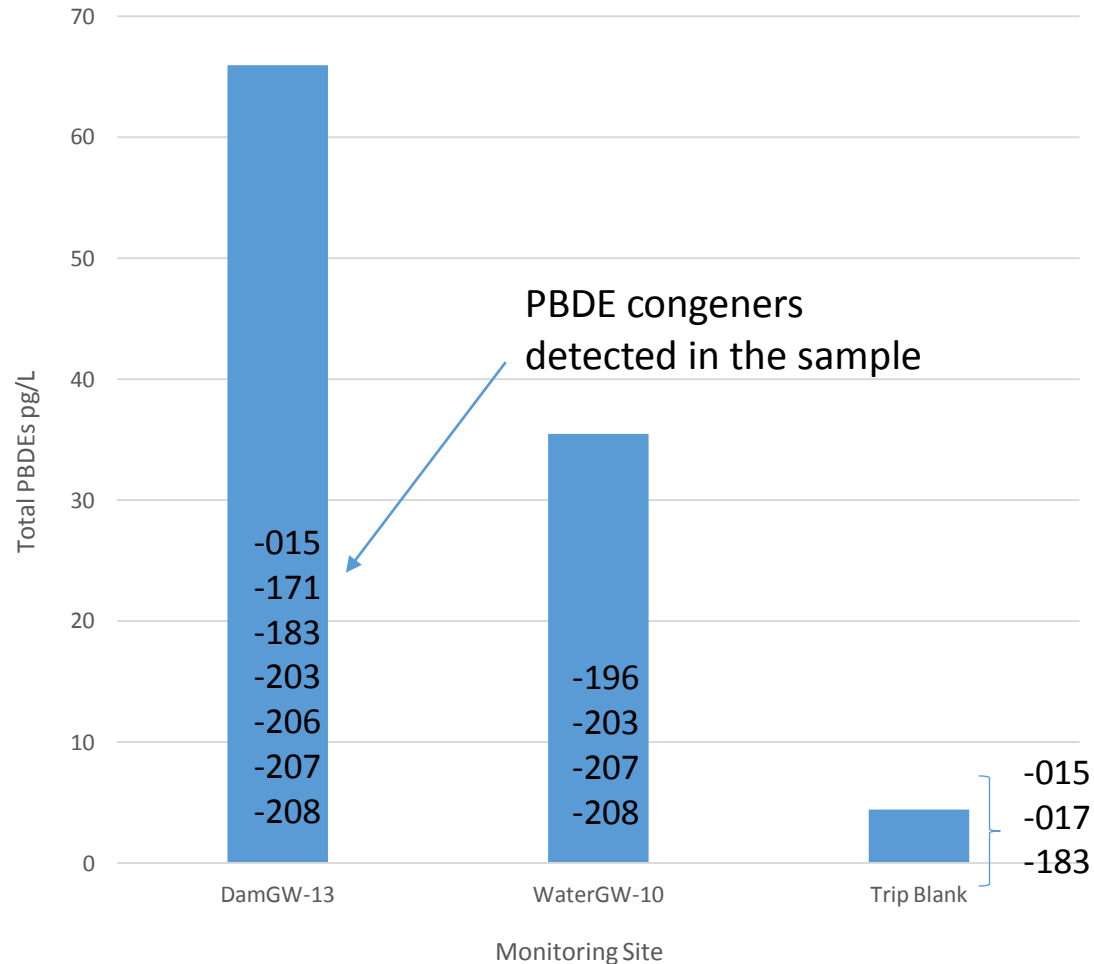
- Spokane Tribal Standards = 1.3 pg/L
- WA State WQ Standards = 170 pg/L
- Approximate sampling system noise
From 2014 Synoptic Survey = 30 pg/L

Sediment - PBDEs



- Concentrations of the most common/most often detected congeners: 47, 99 and 209 were highest at the PostTerm2 site.
- Patterns did not change significantly with normalization to organic carbon or % fines.
- No State Standards exist for PBDEs in surface water, sediment, or fish tissue though there is a fish tissue consumption advisory for PBDEs and PCBs in the Spokane River.
- A closer look at congener patterns in this data set would be of value. For example, BDE-209 is much higher at PostTerm2 compared to other congeners at other sites, potentially indicating a different source at this location.

Groundwater Seep - PBDEs



- Congeners 47, 99 and 209 were detected at significant levels in the Laboratory Method Blank, so were censored as not detected (“U”) in the environmental samples.
- Similar to the PCB results, DamGW-13 has a higher concentration of Total PBDEs relative to WaterGW-10 and the trip blank.
- It would be a useful exercise to follow-up on congener patterns as different congeners were detected at each of the 2 Upriver Dam sampling locations and in the trip blank.