

## Appendix B – Holding time and container type comparisons - 2020 PFAS analyses

To attain some comparative information on the effects of container type and hold time on sample variability, six quality assurance (QA) samples were processed with the 50 2019 Puget Sound-wide samples analyzed for PFAS in 2020. These included samples from three 2019 urban bay stations that were archived in high density polyurethane (HDPE) plastic containers and three from the same stations that were archived in glass containers. Same-station results were compared to one another to examine differences in concentrations from samples held in different jar types.

Additionally, the 2020 results from sediments in the HPDE containers that were held beyond their recommended 1-year holding time were compared with the results from the same samples analyzed in 2019 within the 1-year hold time.

While there are too few samples to make definitive statements, comparison graphics (Figure A-1) suggest some differences in results between samples held in different container types and processed both within and over recommended hold times. These circumstances may affect comparability between the data generated for the 2019 PFAS urban bay samples analyzed in 2019 and data generated for the 2019 Puget Sound-wide samples analyzed in 2020. Comparability of the 2020 “over hold time” data to values generated from PFAS samples collected and processed in previous years (stored in correct containers and analyzed within the holding time) may also be affected.

PFAS data generated for the nine comparison samples indicated that three of 24 PFAS analytes were detected, with some differences observed between the data generated “within hold time” in 2019 and the data generated “over hold time” in 2020, including:

- **PFOS** – Detected in 8 of 9 samples. One of the 6 “over hold time” values generated in 2020 was undetected and reported at a Reporting Limit (RL) that was higher than the 2 samples it was compared to. **The other 5 “over hold time” values generated in 2020 were lower than the 3 “within hold time” values generated in 2019.** Also, the Station 41871 value generated in 2020 for the “over hold time” sample held in HDPE indicated a value 3x higher in the sample held in glass.
- **PFHxA** – Detected in 3 of 9 samples. **This chemical was detected only in the 3 2019 “within hold time” analyses and was reported as undetected at a lower RL for the 6 “over hold time” values generated in 2020.**
- **PFDS** – Detected in 3 of 9 samples. This chemical was only detected in the 2019 “within hold time” analyses, and was reported as undetected in the 2020 “over hold time” analyses at a higher RL than the 2019 values. The data from the two years are therefore not comparable.

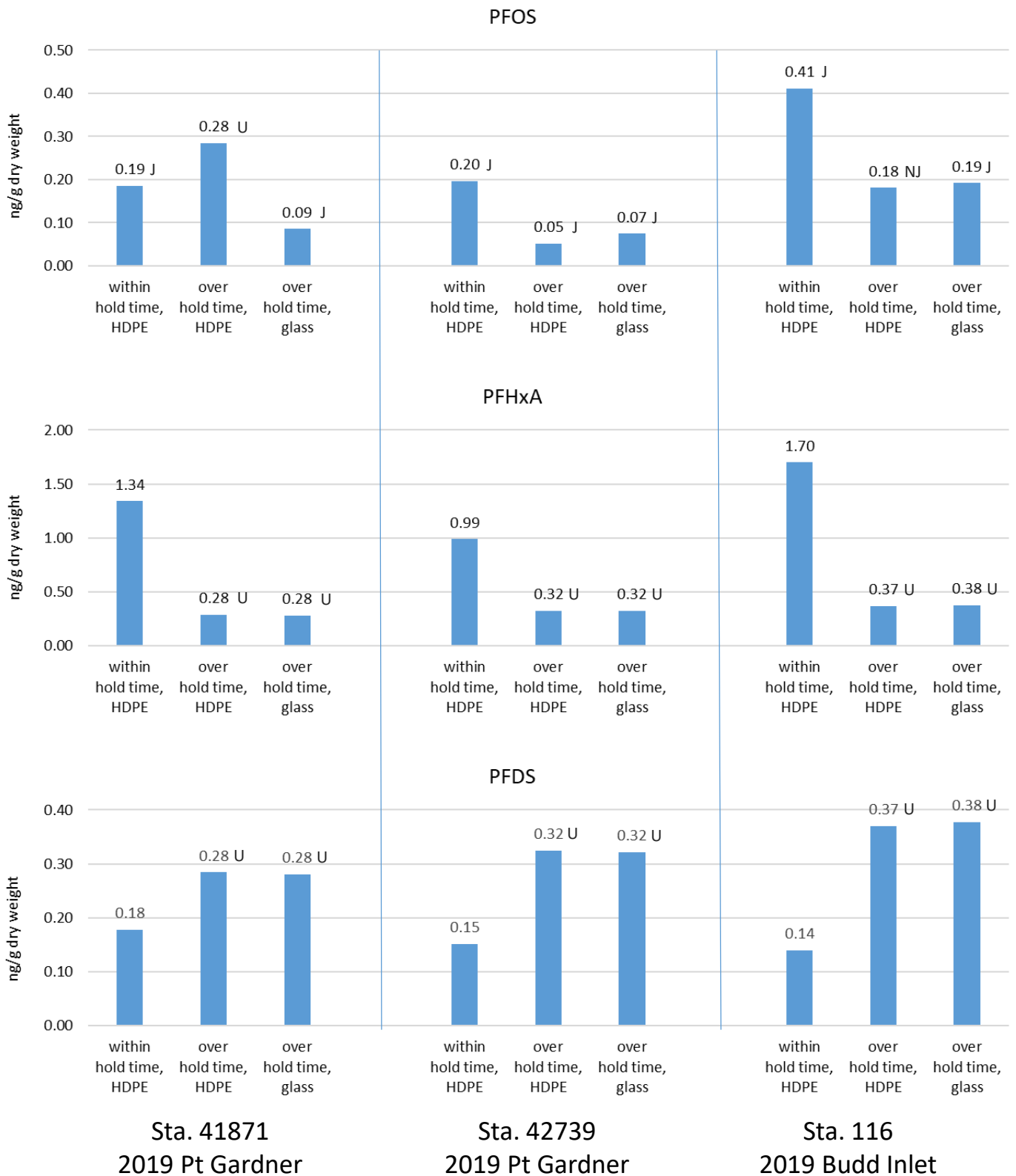


Figure B-1. Holding time and container-type comparisons for nine sediment samples collected from three Puget Sound monitoring stations.

**Qualifier definitions:** **No qualifier** = data unqualified, **U** = undetected (the analyte was analyzed for, but was not detected above the reported quantitation limit, **J** = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample; **NJ** = The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.