

# *SRBC AUDIT & COMPARISON STUDY RESULTS*

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## SRBC Water Quality Nontidal Network April 2016 Audit Findings

- Modified isokinetic sampler was used that may not have been appropriate for all sampling conditions.
- Lower than accepted number of cross-sectional increments were collected.
- Transit rates and velocity checks were not considered prior to sampling.
- Sample processing techniques were not entirely in accordance with CBP protocols- insufficient sample mixing, inadequate churn splitting, sample handling concerns.

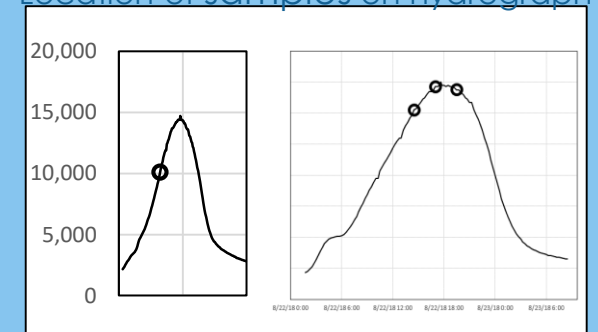
## Historical Perspective

- Prior to 2004, an autosampler was used to collect samples from the bottom.
- Post-2004, a modified DH-48 sampler was used that may not have been ideal for all flow conditions (2016 audit).
- When non-ideal conditions prevailed, DH-48 sampler may not have reached the bottom biasing the samples.
- Samples were collected downstream when the DH-48 sampler was used.

## Side-by-side Study Highlights

- Four samples collected over two storm events (8/4/18 and 8/22/18).
- Both the old DH-48 and new DH-95 sampler were used to collect samples.
- Duplicates were collected each time bringing the total number of samples to sixteen (fewer than projected).
- Storm one samples were collected as Split duplicates (FS1 and FS2).
- Storm two samples were collected as Concurrent duplicates (S1 and S2).
- Upstream samples were collected during storm one with DH-48 and DH-95.
- Upstream samples were collected with DH-95 and downstream samples with DH-48 during storm two.

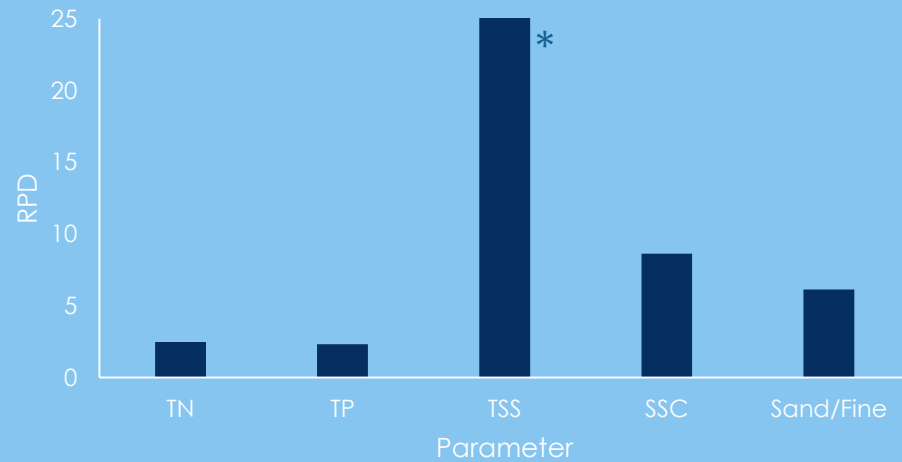
Location of samples on hydrograph



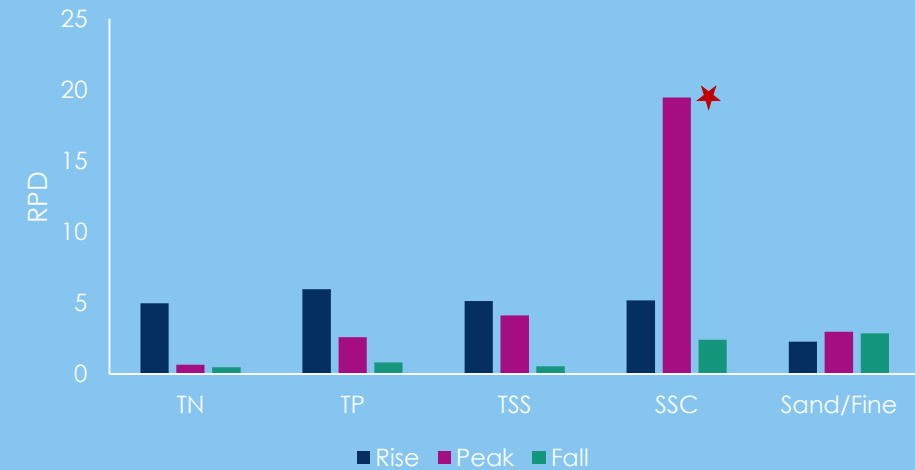
## Study Result 1

No great variability was observed between the two methods, except TSS\* and SSC\*  
DH-48 sampling at historic downstream site was comparable to upstream sampling

Old vs New Samplers@Upstream Site



Old downstream vs New Upstream

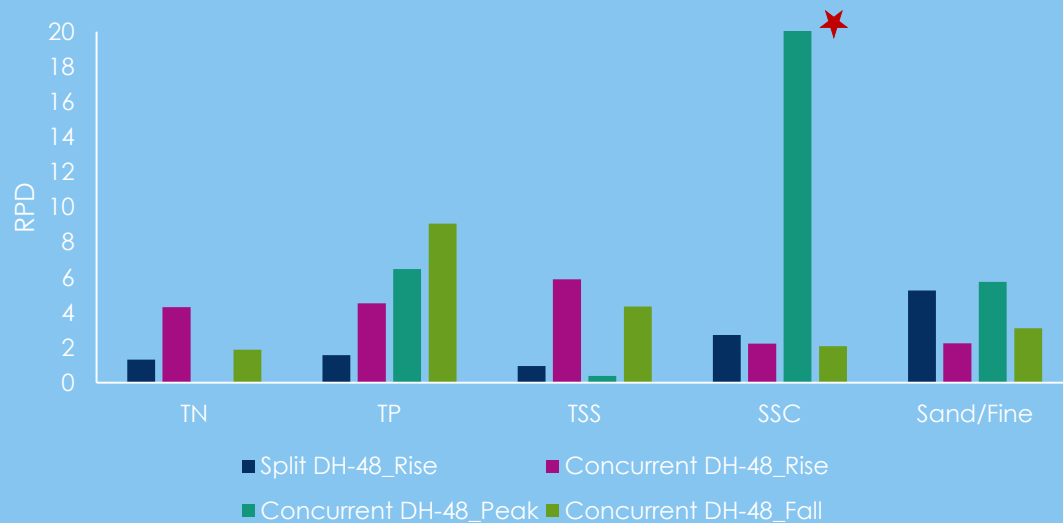


## Study Result 2

Split and or concurrent duplicate results were comparable, in both cases variability is well within limits  
Storm two SSC data under Peak flow conditions was an exception\*

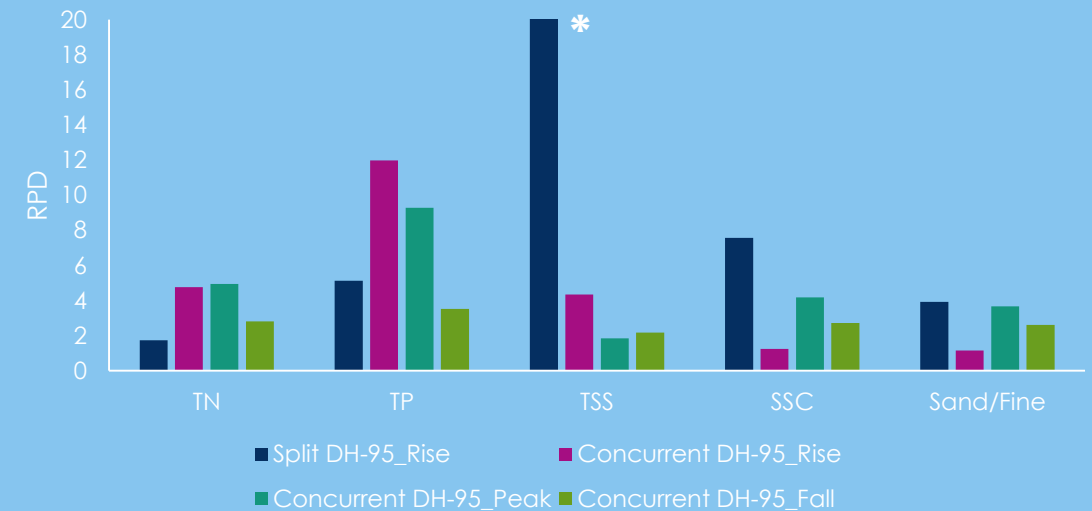
Variability in RPDs: Split vs Concurrent Dups

DH-48



Variability in RPDs: Split vs Concurrent Dups

DH-95



## Summary:

Following the April 2016 audit, a second audit was conducted in late 2017 and SRBC personnel demonstrated excellent sampling methods compliant with CBP protocols.

A side-by-side comparison study was carried out in August 2018 and the study results provide reasonable information for comparing data.

Based on the input from the study plan, and given the limited resources there appears to be a general consensus to leave the historical data as is.