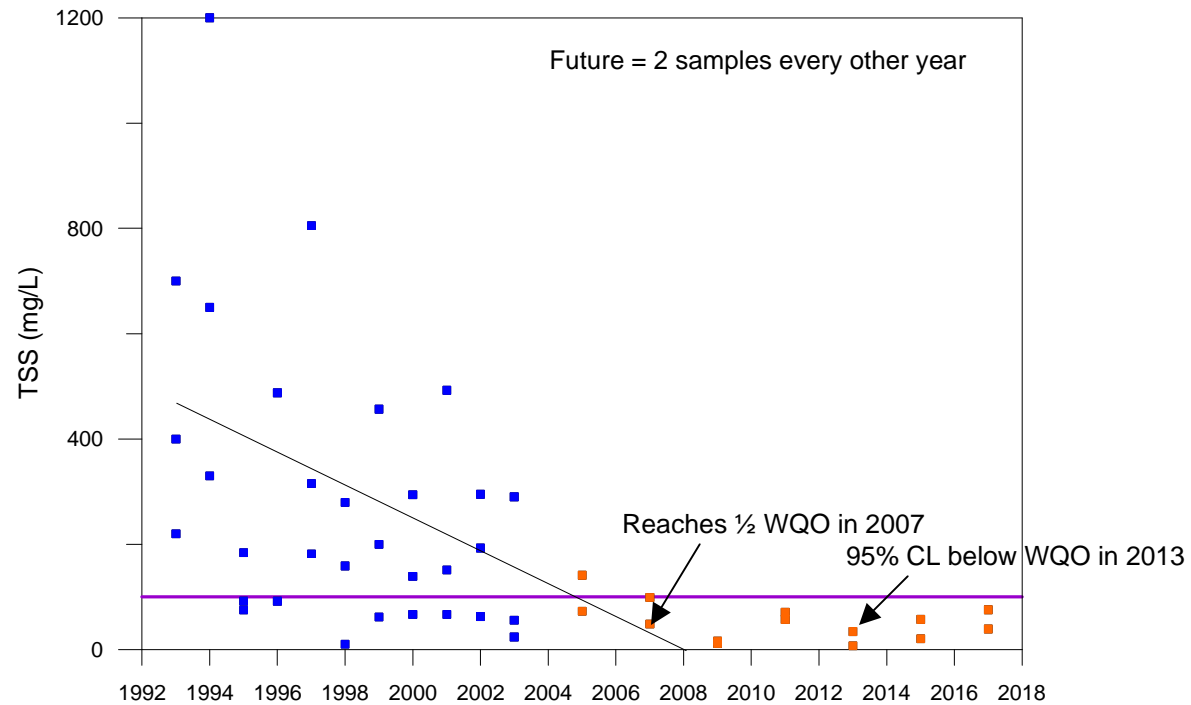
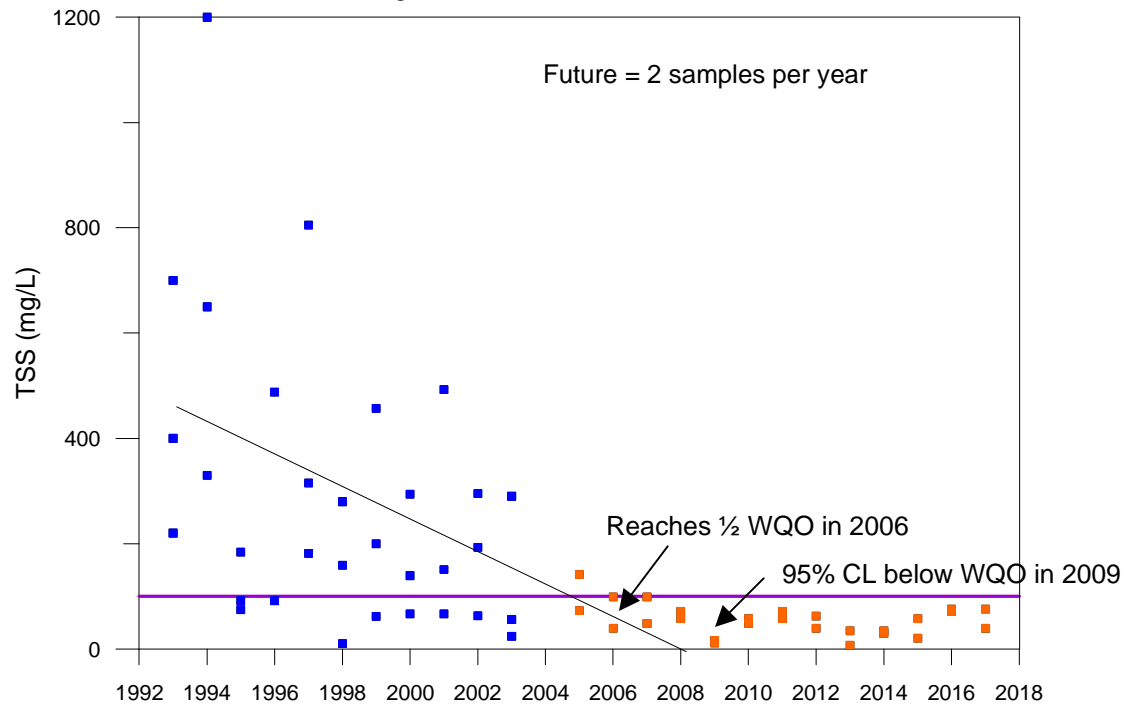


COC with Significant Downward Trend at Present Time



COC WITH SIGNIFICANT DOWNWARD TREND AT THE PRESENT TIME

Assumptions and Procedures Reduction of sampling from 3 times a year to 2 times per year

2004 data not included

Std Dev proportional to mean

Used slope values and randomized with Std Dev

Once mean reached 50, kept it at 50

Use 2005, 2007, etc for every other year sampling

- How many years to get to $\frac{1}{2}$ of the WQO (50 mg/L) for TSS

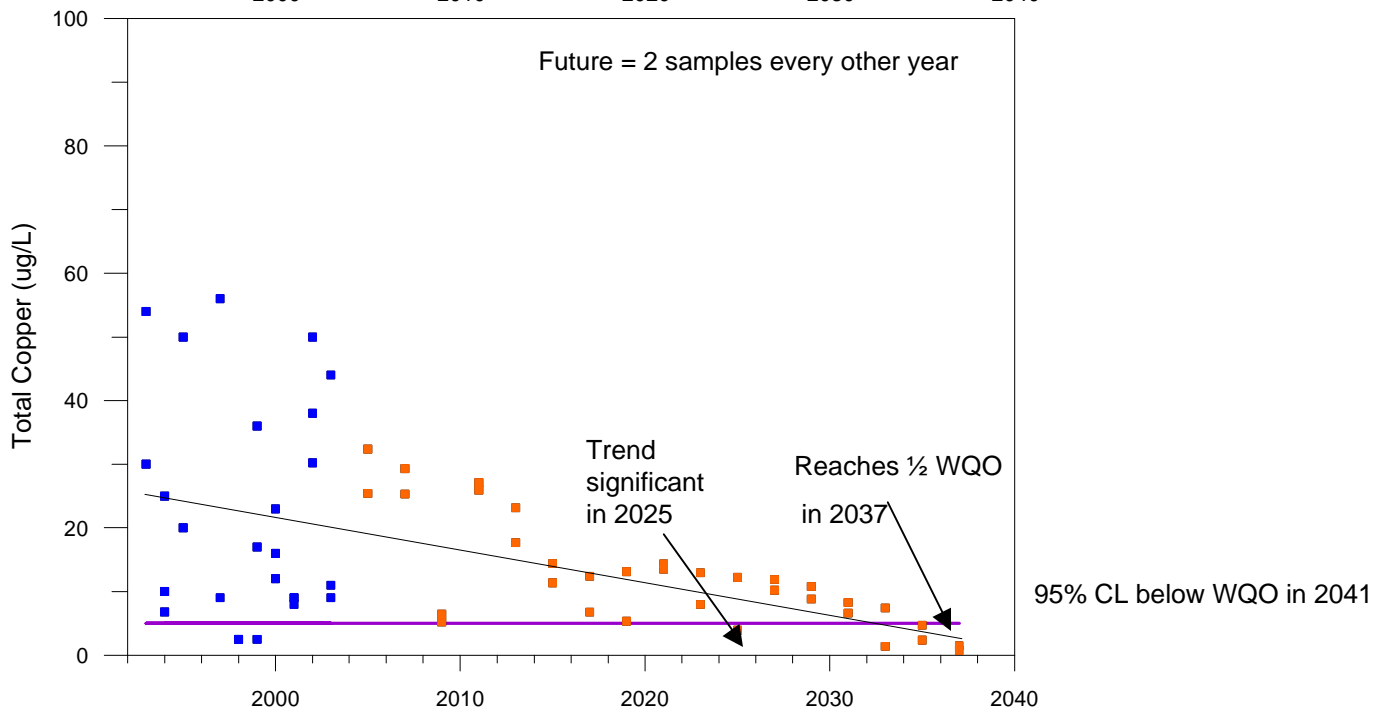
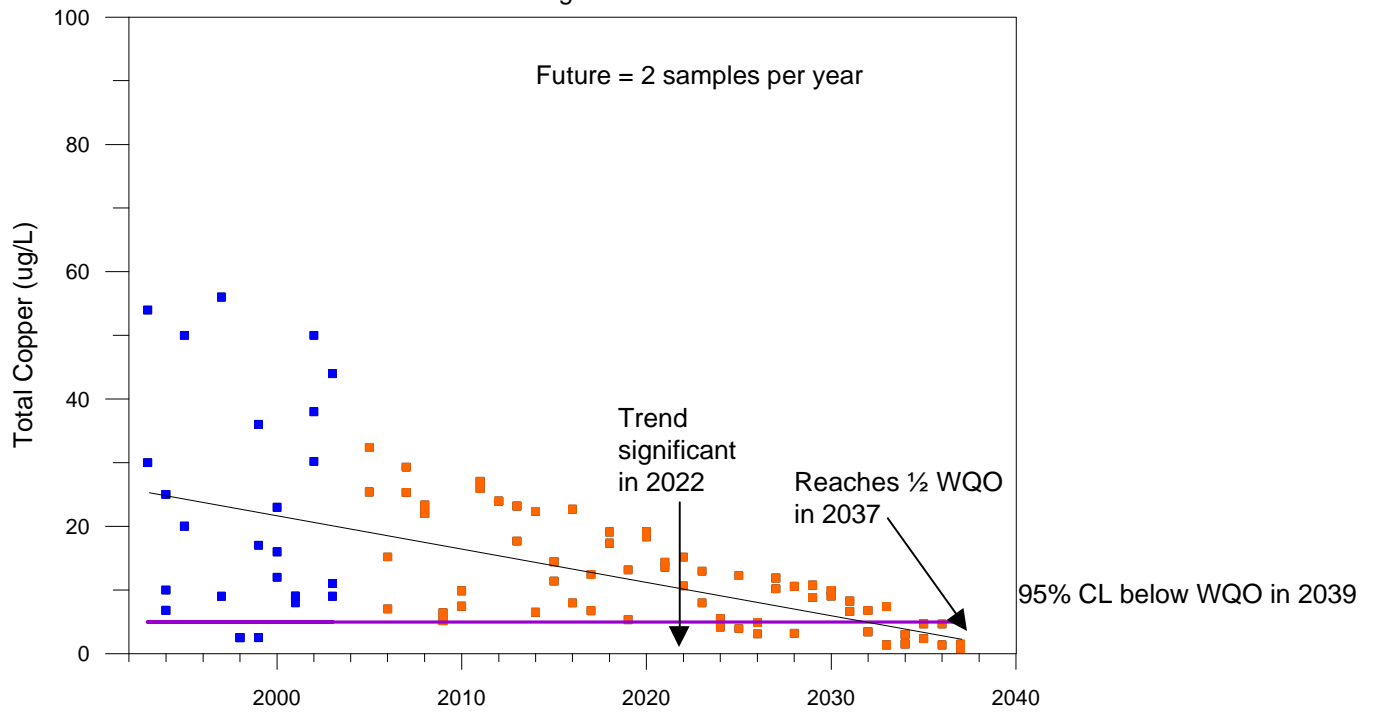
Reach 50 mg/L in 2006 sampling every year – 2 years of sampling effort

Reach 50 mg/L in 2007 sampling every other year – 2 years of sampling effort

To have 95% confidence concentration is below WQO, 4 years of sampling effort (8 events) are needed

- **Q1: How many years to get to $\frac{1}{2}$ of the WQO (i.e., 50 mg/L) for this Constituent of Concern (COC) example**
- **Q2: How long after the trend reaches $\frac{1}{2}$ of the WQO will it take to have 95% confidence that the concentration is below WQO**
- **Assumptions and Procedures**
 - Reduction of sampling from 3 times a year to 2 times per year
 - 2004 data not included
 - Std Dev proportional to mean
 - Used slope values and randomized with Std Dev
 - Once mean concentration reached 50 mg/l, kept it at 50
- **To have 95% confidence concentration is below WQO, 4 years of sampling effort (8 events) are needed**

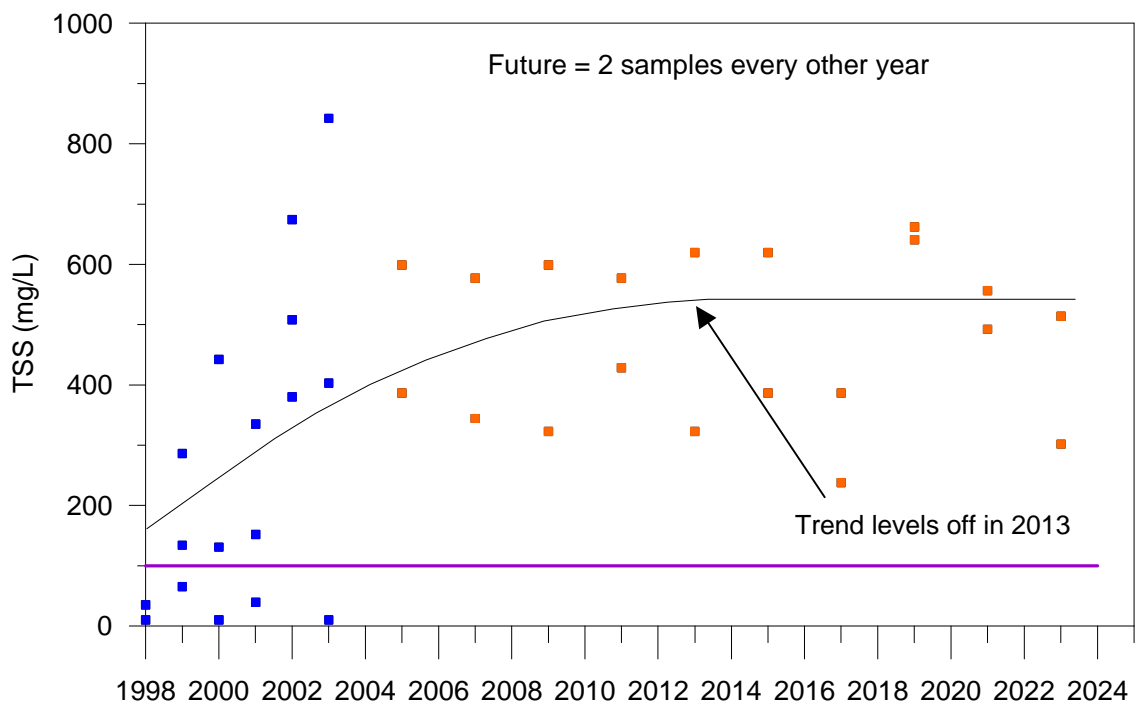
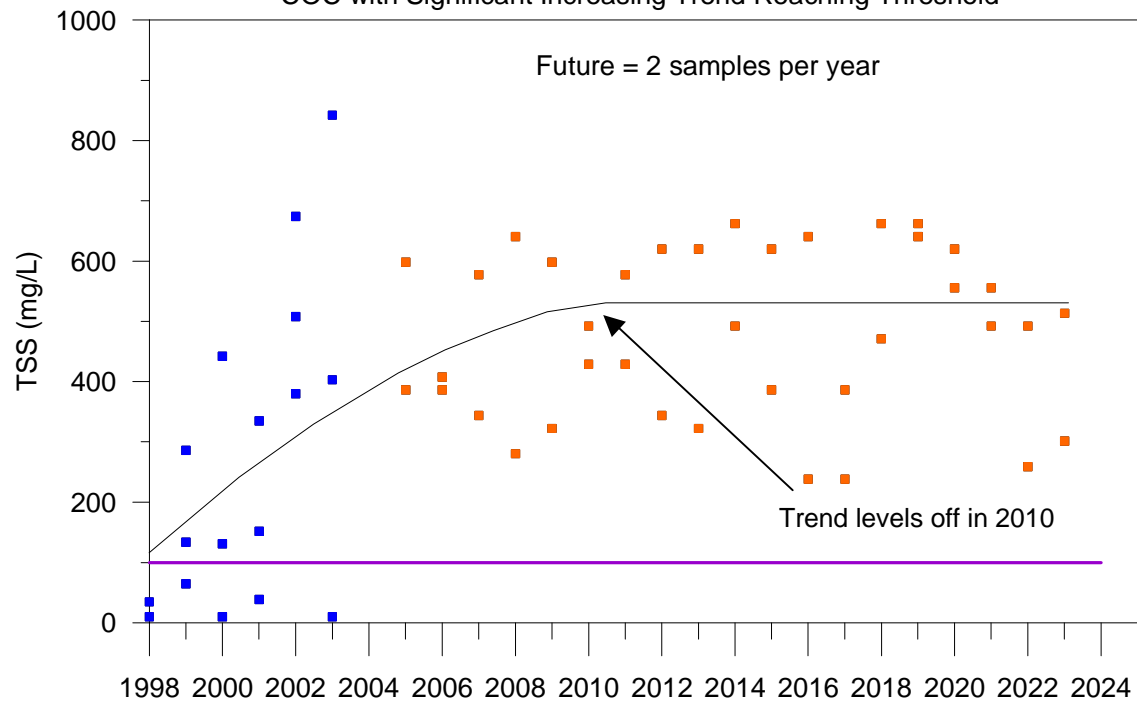
COC with Downward NON-Significant Trend at Present Time



COC with Non-Significant Downward Trend at Present Time

- How many years to get to $\frac{1}{2}$ of the WQO (5ug/L)
 - How many years until the regression line is significant
 - How many sampling events for 95% confidence concentration is below WQO
- a) Reduction of sampling from 3 times a year to 2 times per year
 - b) 2004 data not included
 - c) Std Dev proportional to mean
 - d) Used slope values and randomized with Std Dev
 - e) Reach 2.5 ug/L in 2037 sampling every year – 33 years of sampling effort
 - f) Use 2005, 2007, etc for every other year sampling
 - g) Reach 2.5 ug/L in 2037 sampling every other year – 17 years of sampling effort
- With 2 samples every year, trend becomes significant in 2022
 - With 2 samples every other year, trend becomes significant in 2025
 - To have 95% confidence concentration is below WQO, 3 years of sampling effort (6 events) are needed

COC with Significant Increasing Trend Reaching Threshold



COC with Increasing Trend Reaching Threshold

- How long until slope = “0”
 - a) Use TSS at mean of last 2 years
 - b) Use Std Dev as function of mean TSS
 - c) 2004 data not included
 - d) Reach target (slope=0) in 2010 - 6 years of sampling effort
 - e) Use 2005, 2007, etc data for every other year estimate
 - f) Reach target (slope=0) in 2013 - 5 years of sampling effort over a 9 year period