

Pesticides, PPCPs, and Waste Indicators Monitoring and Analysis of the St Vrain Sanitation District in 2013



EPA Region 8 Project Team

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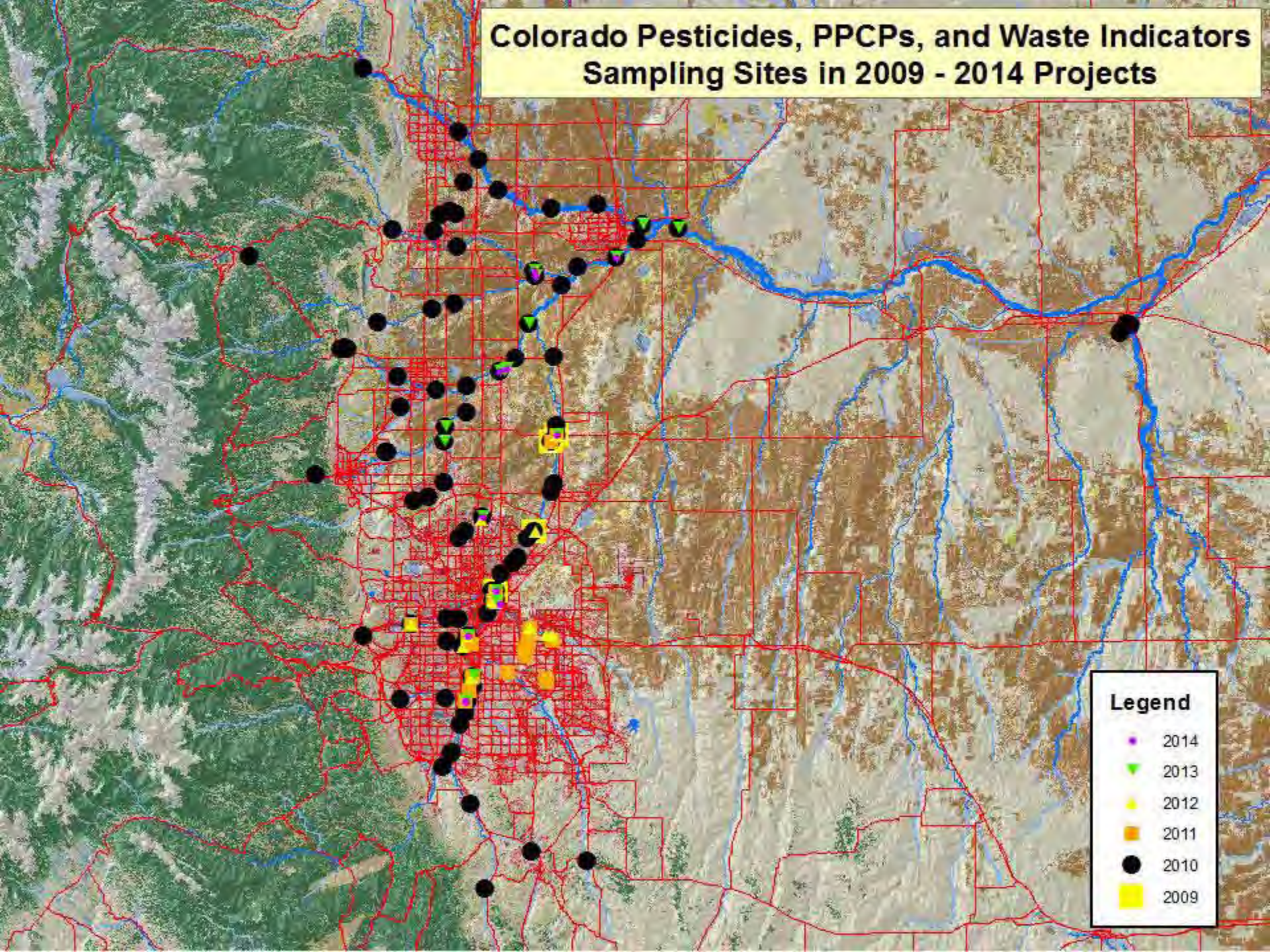
Pesticides, PPCPs, and Waste Indicators Monitoring and Analysis of the St Vrain Sanitation District in 2013

***Special Study incorporated into the 2013
sampling and analysis Project for Pesticides,
PPCPs, and Waste Indicators in Colorado.***

***Colorado effort started in 2009 and has been
conducted annually since then, with a primary
focus in the Northern Front Range (South
Platte Basin) and the Grand Valley***

Many Denver Metro Area Sites, each year

Colorado Pesticides, PPCPs, and Waste Indicators Sampling Sites in 2009 - 2014 Projects



Pesticides, PPCPs, and Waste Indicators Monitoring and Analysis of the St Vrain Sanitation District in 2013

- ***Four Sites***
 - ***Two Sites on the St Vrain River***
 - *One upstream of the WWTP Discharge – SV13*
 - *One downstream of the WWTP Discharge - SVSDDS*
 - ***Two Sites in the WWTP (Waste Ind. excl.)***
 - *Influent Site - SVSDI*
 - *Effluent Site -SVSDE*
- ***Monthly Sampling (May – November)***
 - ***Interrupted by Federal Government Shutdown
(No Early October Sampling)***



Colorado 2013

**Pesticides, PPCPs, and Waste Indicators Project
St Vrain Sanitation District Sampling Sites**



SV13

SVSDDS

SVSDE
(effluent)

SVSDI
(influent)

St Vrain Sanitation District

2013 Sampling Dates for Pesticides, PPCPs, Waste Indicators

- *May 1*
- *June 4*
- *July 2*
- *August 5*
- *September 4*

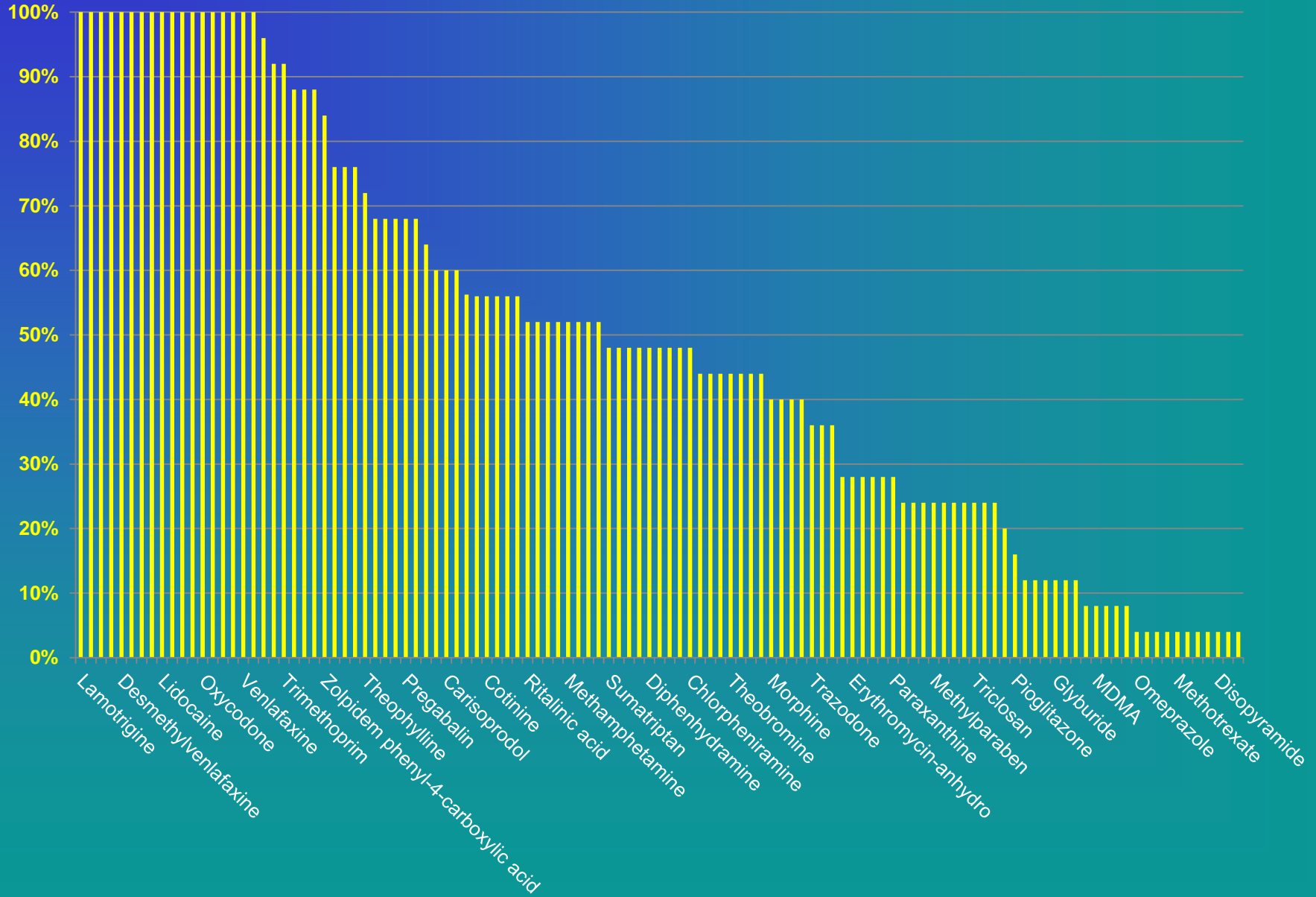
- *Flood and Federal Government Shutdown*

- *October 29 (Post Flood Project, included PPCPs)*
- *November 4*

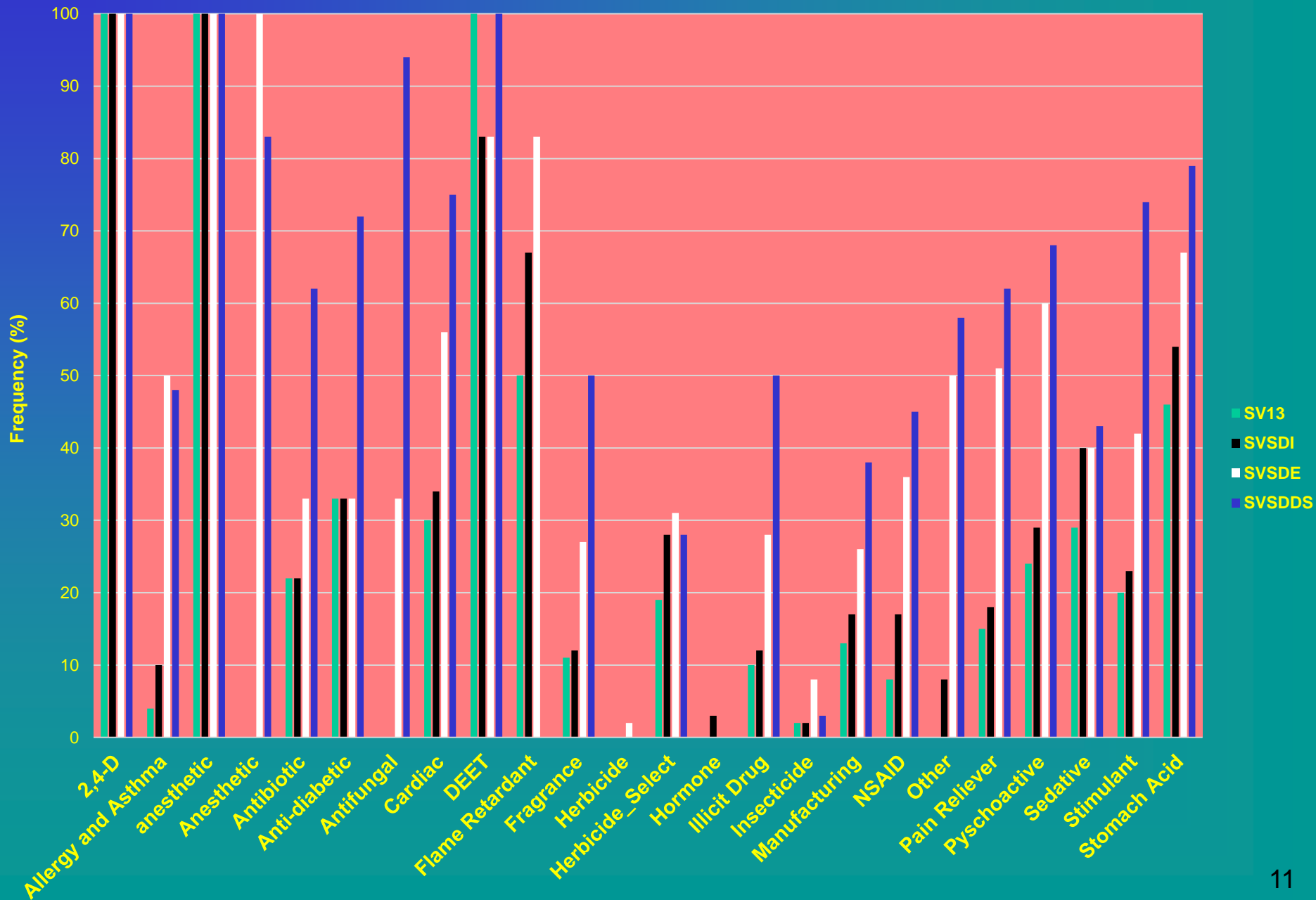
Project/Analyte Summary

- **274 Sample Analyses for Each Site, for each Month**
 - **Plus Replicates, Field Blanks, and Lab Standards**
 - **146 PPCP Analytes**
 - **58 Waste Indicator Analytes**
 - **70 Pesticides**
- **4 Analytes were Analyzed by Two Different Methods**
 - **Atrazine (Pest/PPCP)**
 - **Caffeine (PPCP/Waste Ind.)**
 - **Carbaryl (Pest/Waste Ind.)**
 - **Triclosan (PPCP/Waste Ind.)**
- **Only 20 of the Analytes have Colorado Water Quality Standards**
 - **Mostly Pesticides**
- **Beyond pesticides, the Projects have focused on the question of *What is in the Water?* (Emerging Contaminants of Concern)**

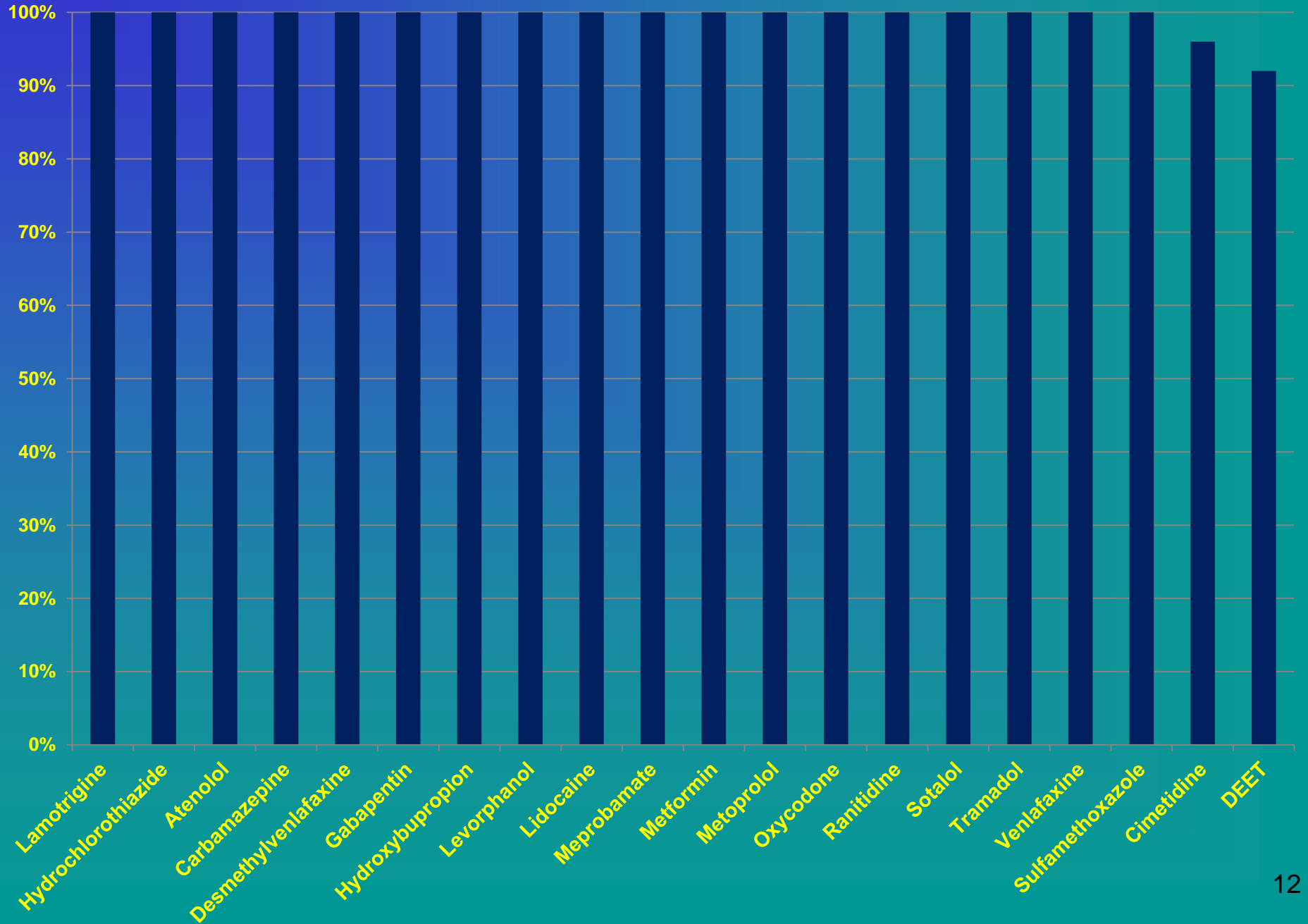
2013 Ste. Vrain PPCP Detect Frequency (115 Analytes of 146)



2013 Detection Frequency at the St. Vrain WWTP

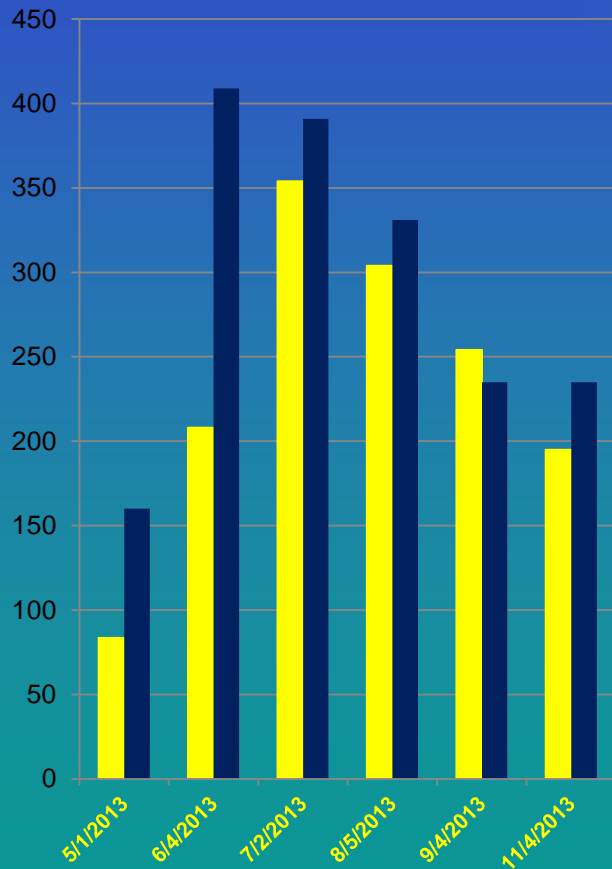


Ste. Vrain Top 20 PPCP Detect Frequency

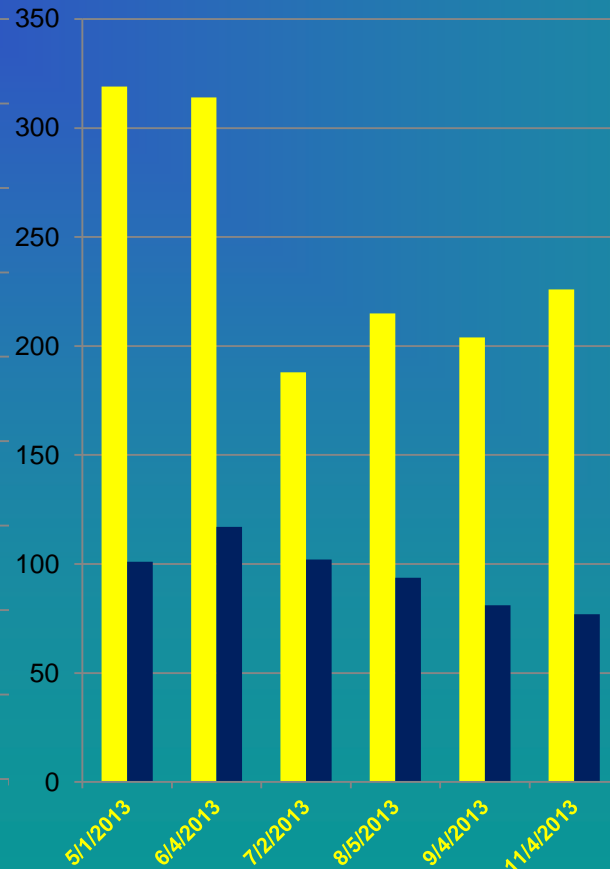


Select PPCP Analyte Inflow vs Outflow Comparison

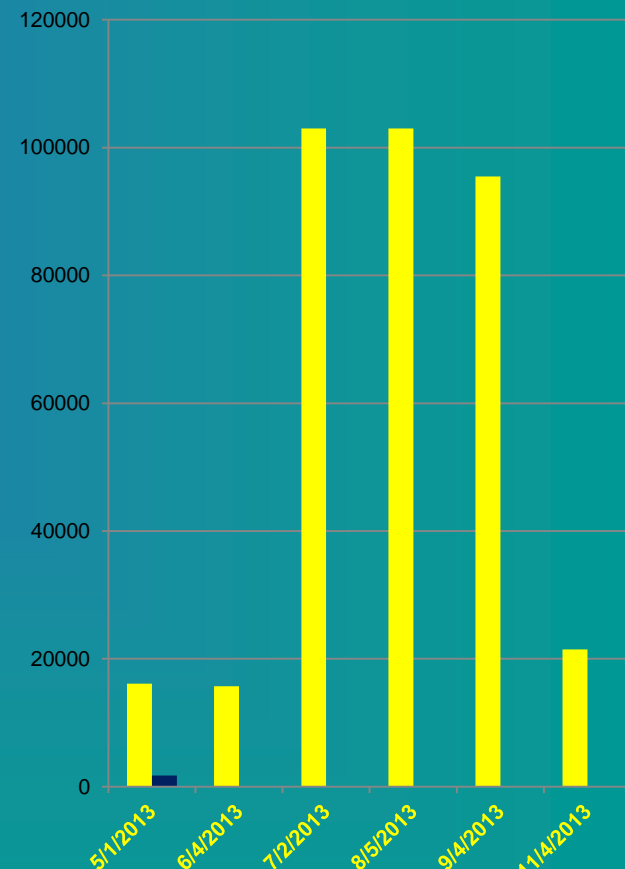
Lidocaine ng/L



Oxycodone ng/L

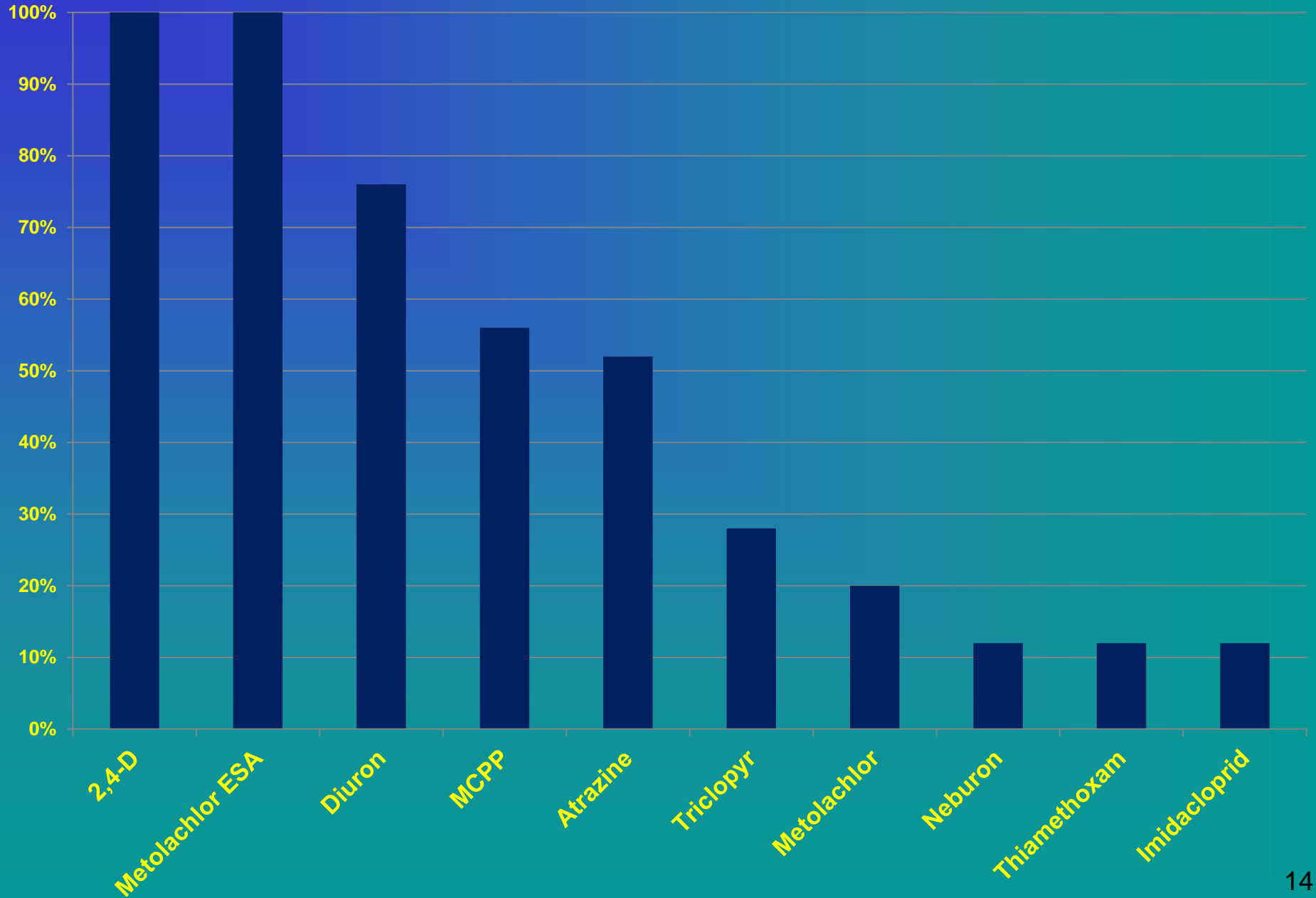


Caffeine ng/L



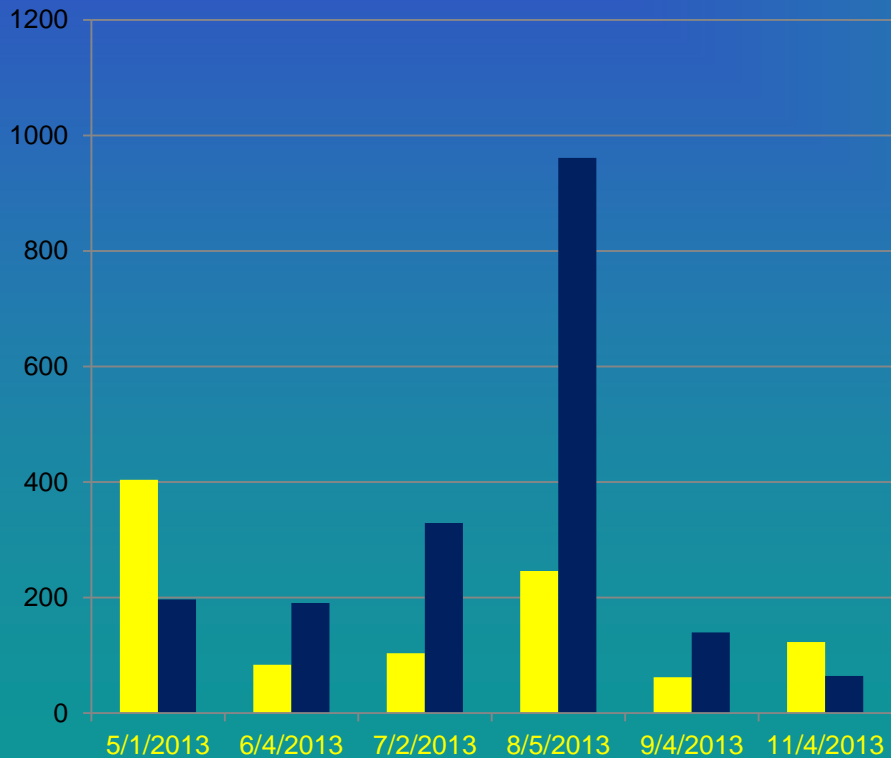
Yellow = SVSDI
Blue = SVSDE

Ste. Vrain Top 10 Pesticide Detect Frequency

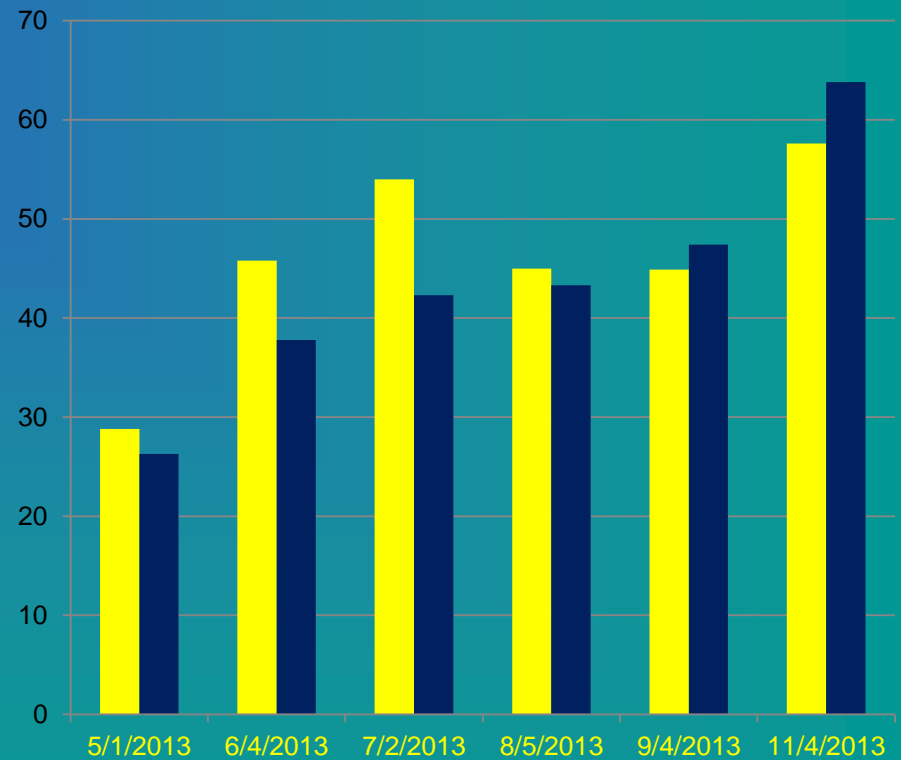


Select Pesticide Analyte Inflow vs Outflow Comparison

2,4-D ng/L

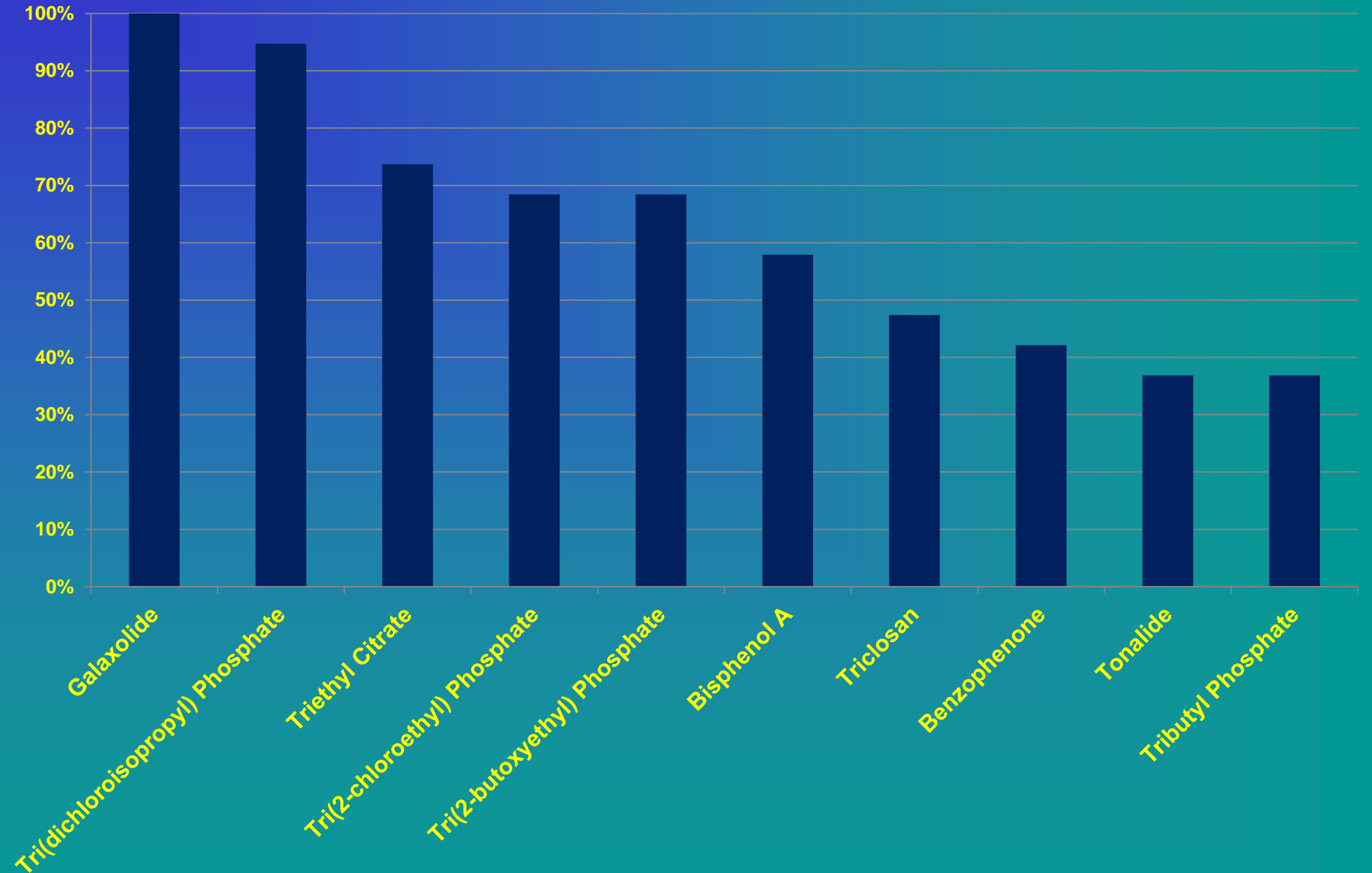


Metolachlor ESA ng/L



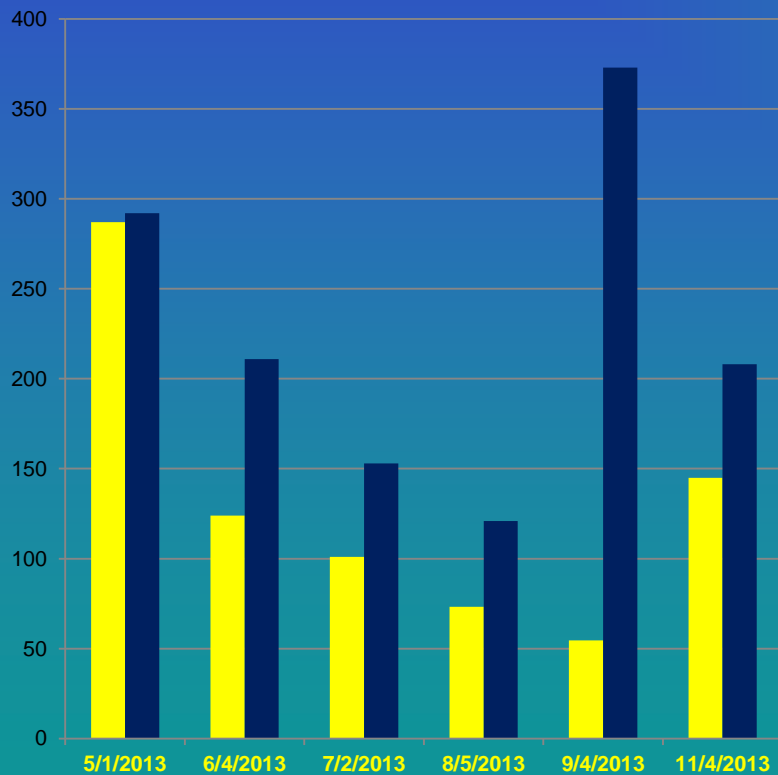
Yellow = SVSDI
Blue = SVSDE

Ste. Vrain Top 10 Waste Ind. Detect Frequency

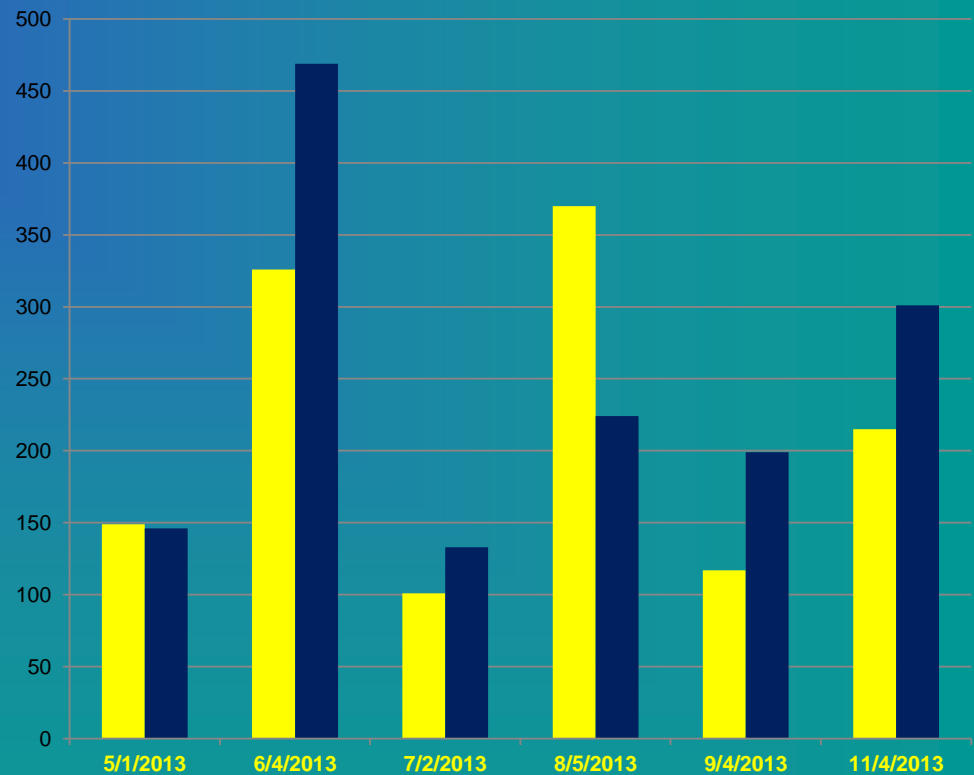


Select Waste Indicator Analyte Upstream vs Downstream Comparison

Galaxolide ng/L



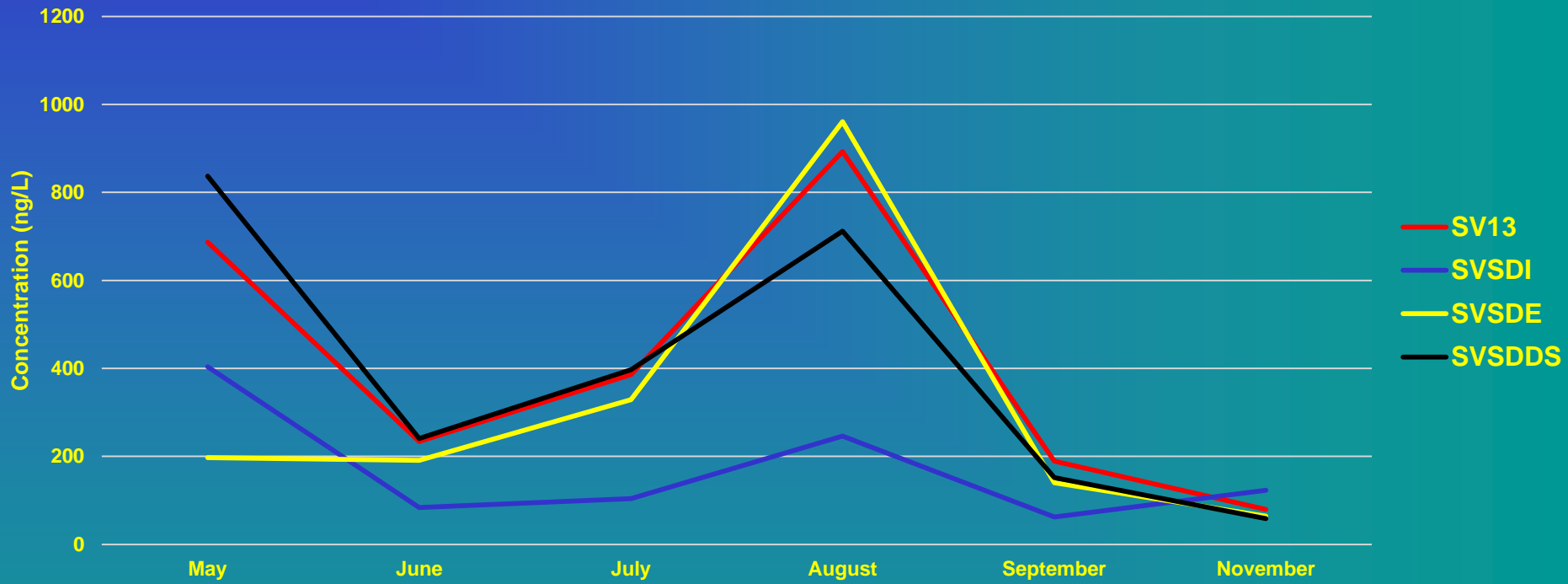
TDIP Comparisons ng/L



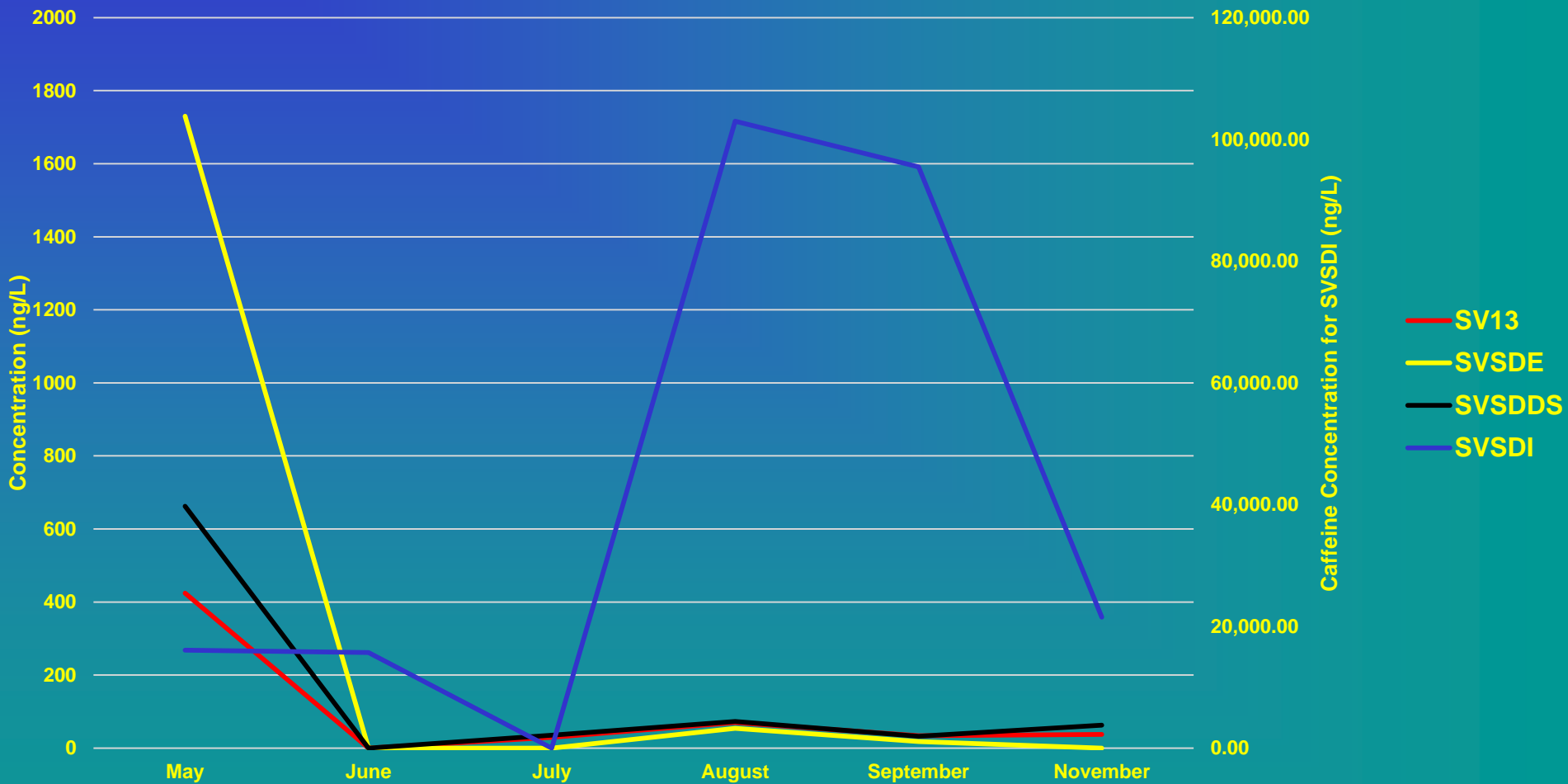
Yellow = SV13
Blue = SVSDDS

Questions?

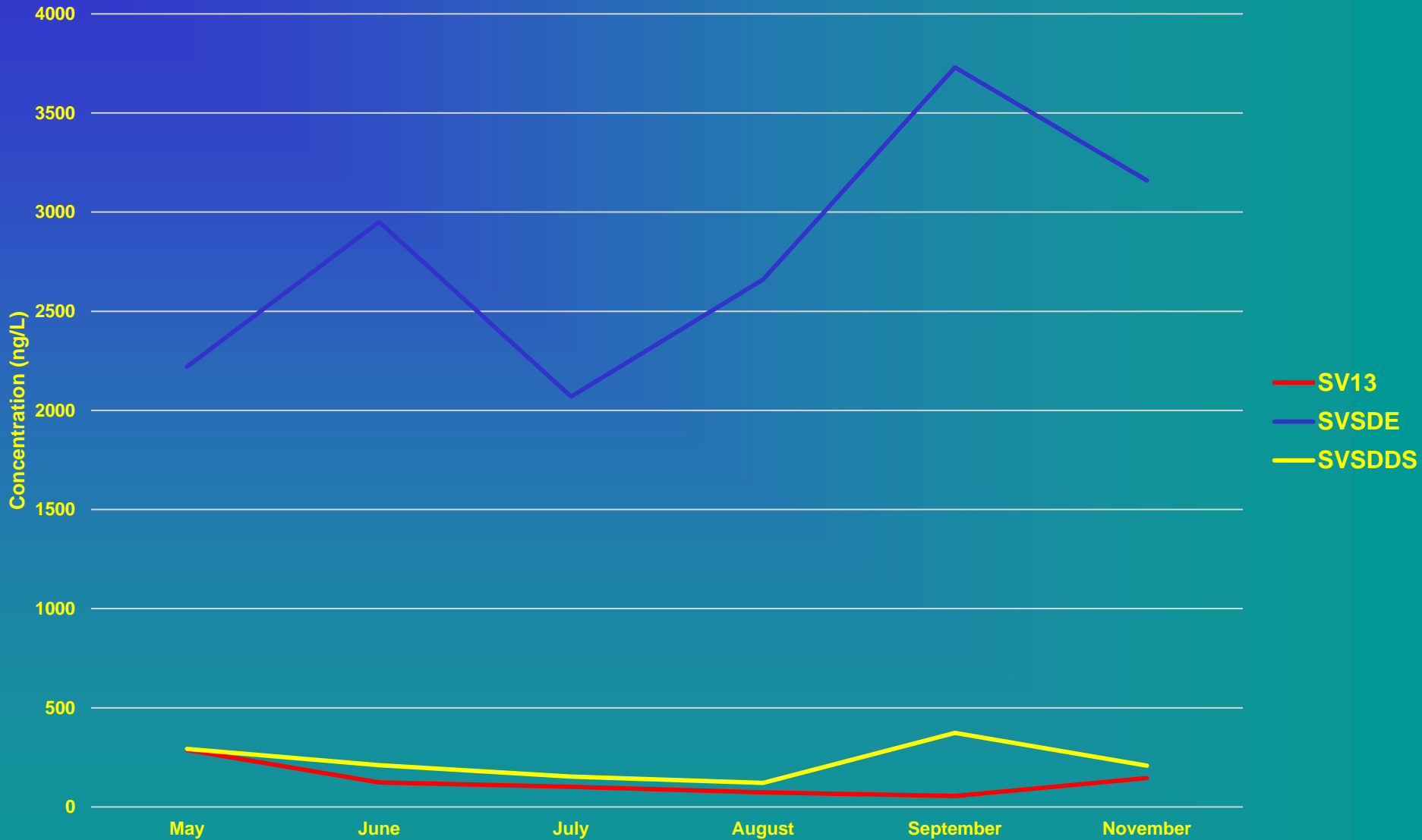
2,4-D Concentration at SVSD from May-November 2013



Caffeine Concentration at SVSD for May - November 2013

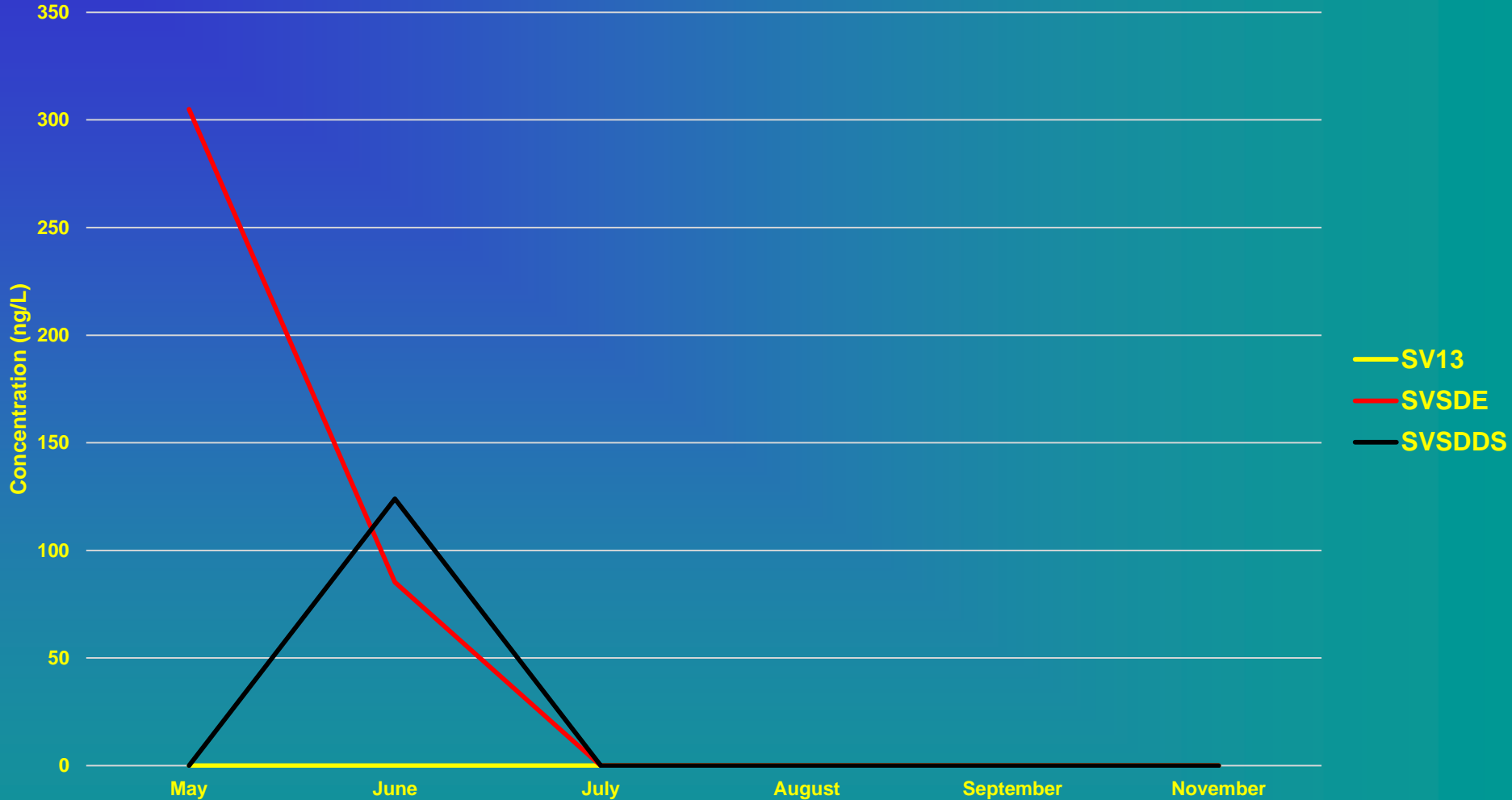


Galaxolide Concentration from May - November 2013 at SVSD



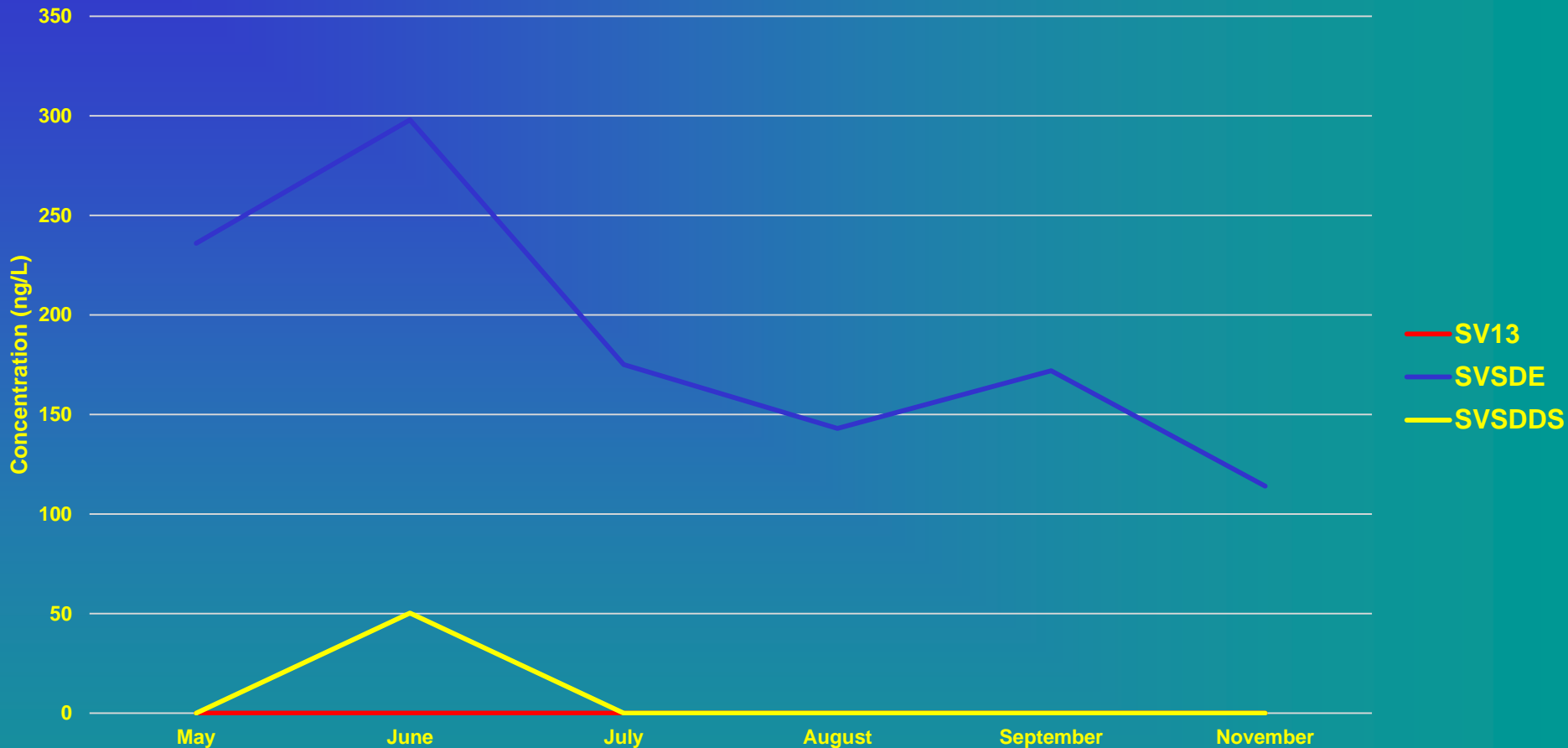
There was only one SVSDI sample in May of 2013 for Galaxolide that was recorded at 16,400 ng/L

Nonylphenol Concentration at SVSD for May - November 2013



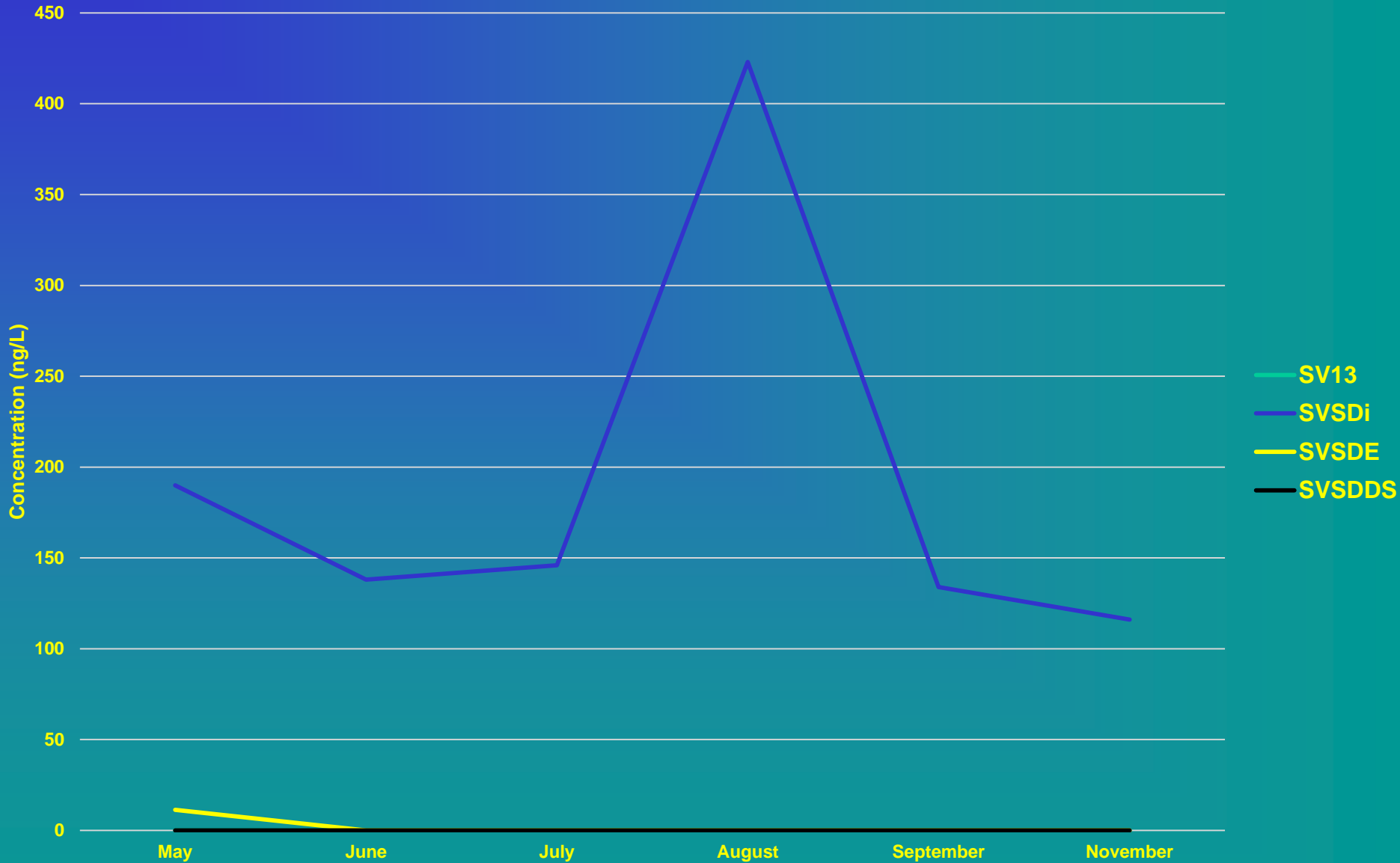
There was only one sample of Nonylphenol taken at SVSDI for May 2013, which was recorded at 6,290 ng/L)

Benzophenone Concentration at SVSD from May - November 2013



There was only one sample of Benzophenone taken at SVSDI for May 2013, which was recorded at 1,140 ng/L

Cocaine Concentration at SVSD from May - November 2013



Selected Front Range 2012 Results of Pesticides, PPCPs, and Waste Indicators Monitoring and Analysis

- ***South Platte River***

2012 South Platte River Results

Triclosan, Totals vs Dissolved

