

Passaic River Water Quality Better Than You Think

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Monitoring Background

- **PVSC/NJHDG Monitors For Fecal Coliform Bacteria**
Since 2003
33 Stations
1-5 Samples per Month
- **Lower Passaic River – Newark Bay**
Tidal Passaic River
Below Dundee Dam to Shooters Island
8 Water Quality Stations

Sample Locations



Tidal Passaic River Classification

- **Upper Portion**

Dundee Dam – Second River
FW2/SE2

Salinity Dependent

FW2 – Primary Contact

SE2 – Secondary Contact

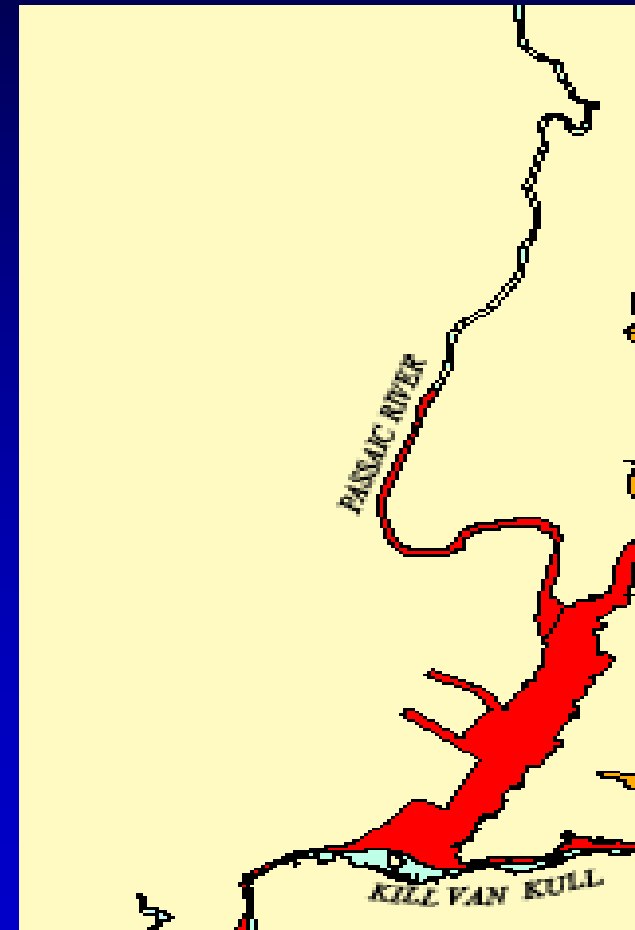
Fish Propagation

- **Lower Portion - Newark Bay**

Second River - Mouth

SE3 – Secondary Contact

Fish Migration



NJ Surface Water Standards

Class	Use	Criteria
SE2	Secondary Contact (Fishing/Fish Propagation)	Fecal Coliform: Geo. Mean – 770/100mL
SE3	Secondary Contact (Fishing/Fish Migration)	Fecal Coliform: Geo. Mean – 1500/100mL
FW2 (Fresh Water)	Primary Contact	E. Coli: Geo. Mean – 126/100mL SSM – 235 /100mL Presumed Fecal – Geo Mean 200/100mL (Old STD)

Measured Geometric Means Fecal Coliform

Station ID	Station Location	Class	Standard	Compliance with Current WQ Standards	
				Geo Mean	
7	Passaic/Union Ave.	FW2/SE 2	200/770	428	N/Y
8	Passaic/Rutgers St.	FW2/SE 2	200/770	332	N/Y
10	Passaic/Clay St.	SE3	1500	351	Y
11	Passaic/Jackson St.	SE3	1500	335	Y
12	Passaic/Kearney Pt.	SE3	1500	142	Y
17	Newark/Upper	SE3	1500	77	Y
18	Newark/Lower	SE3	1500	54	Y
19	Newark/Shooters Is.	SE3	1500	50	Y

Passaic River Model Analysis

- **Use PATH Model**

Pathogen Indicator Model

Calibrated and Applied For EPA NY/NJ Harbor TMDL Program

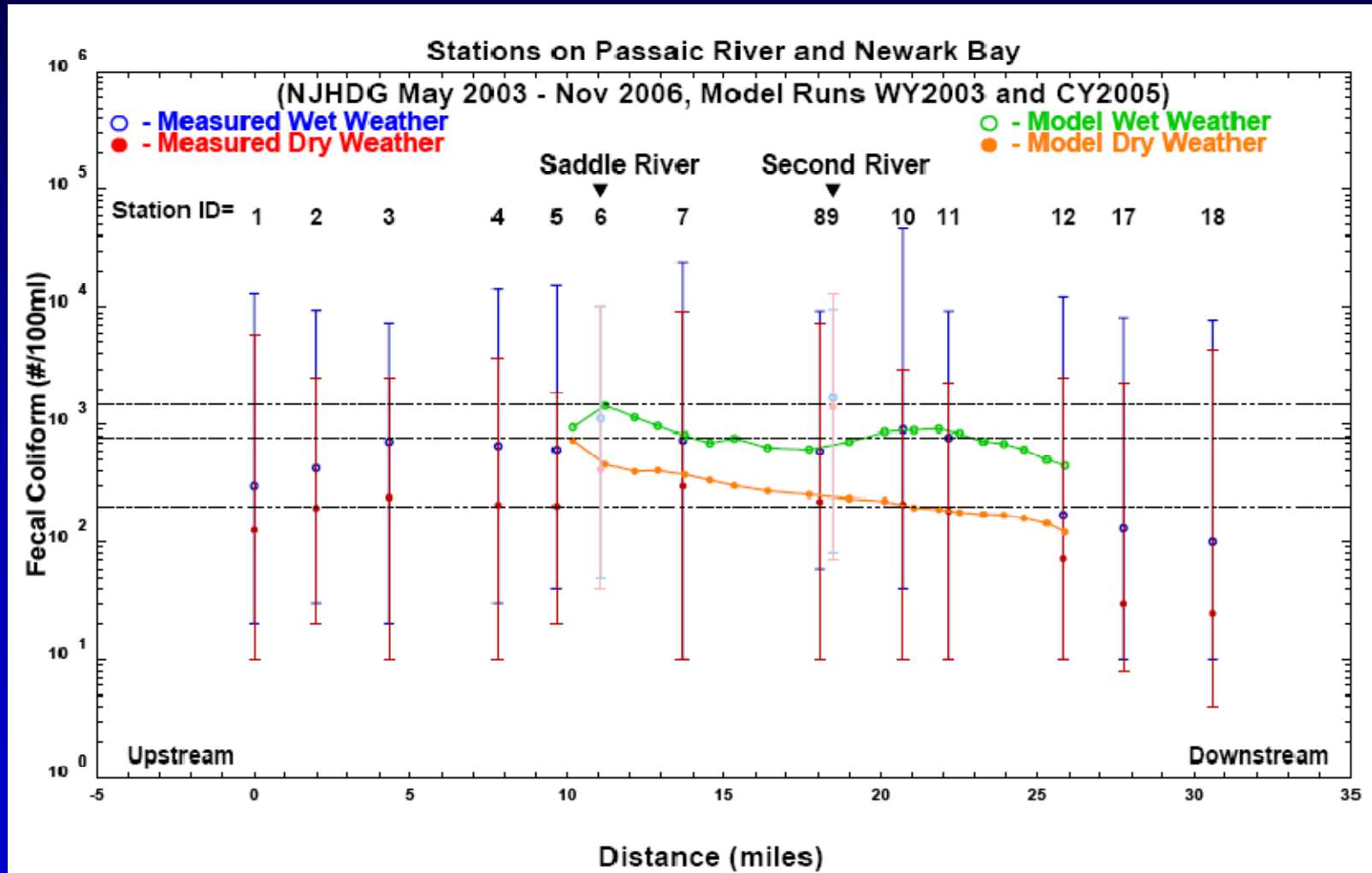
- **Quality Assessment With PVSC/NJHDG Data**

- **Calculate Monthly Geometric Means**

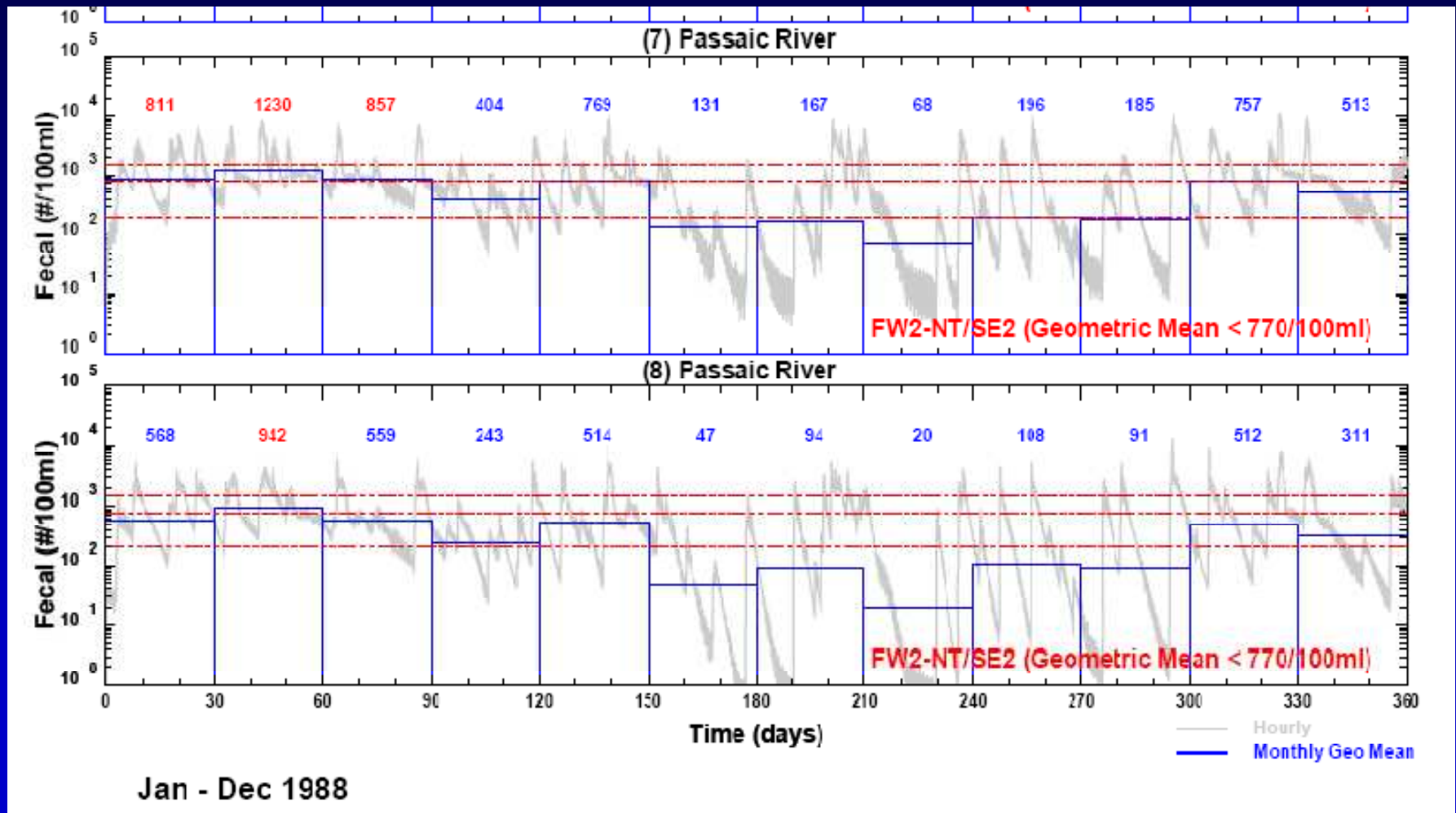
Average Conditions – 1988

Wet Conditions – 2003 (Approximately Ten Year Return Frequency)

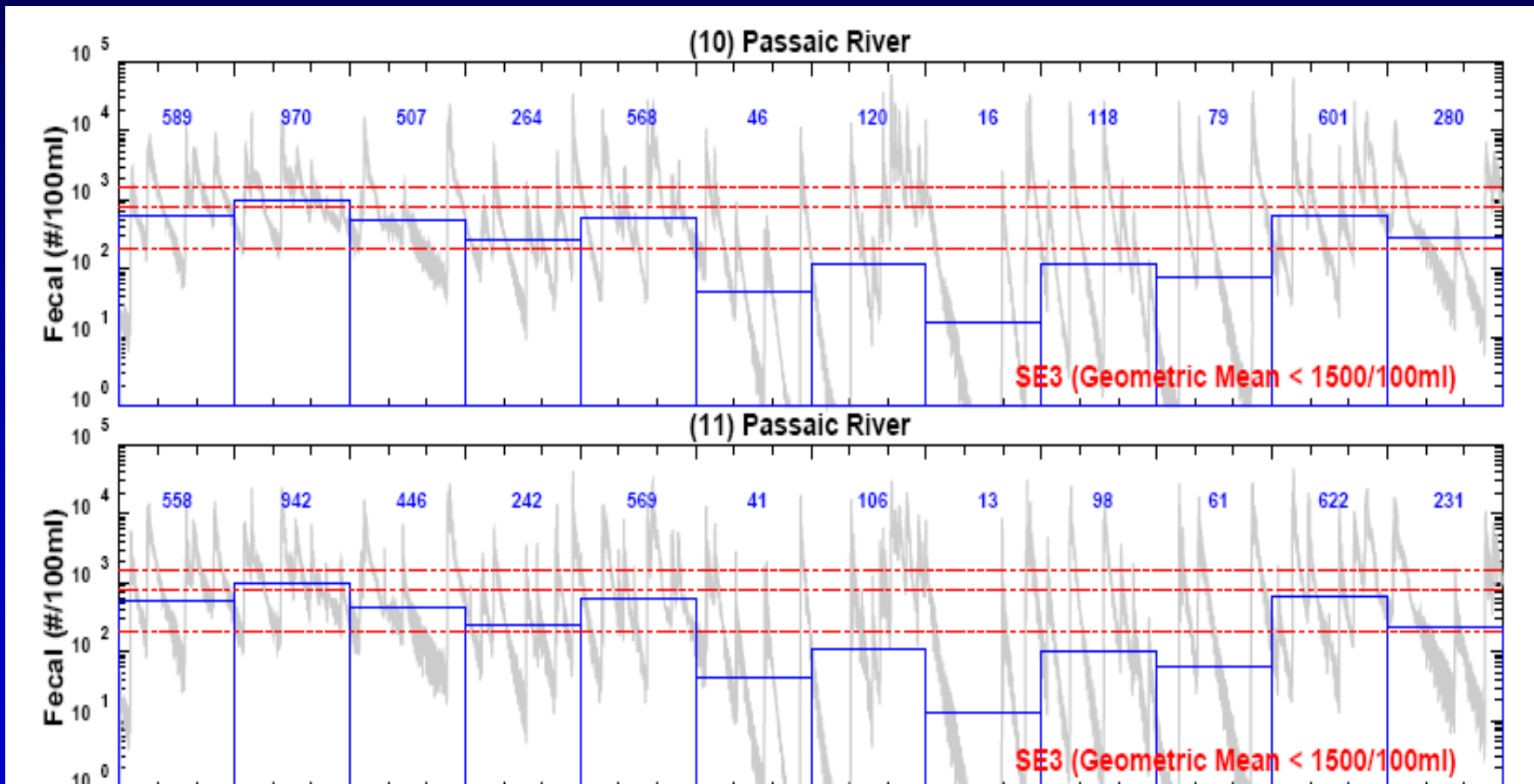
Passaic River Model Assessment



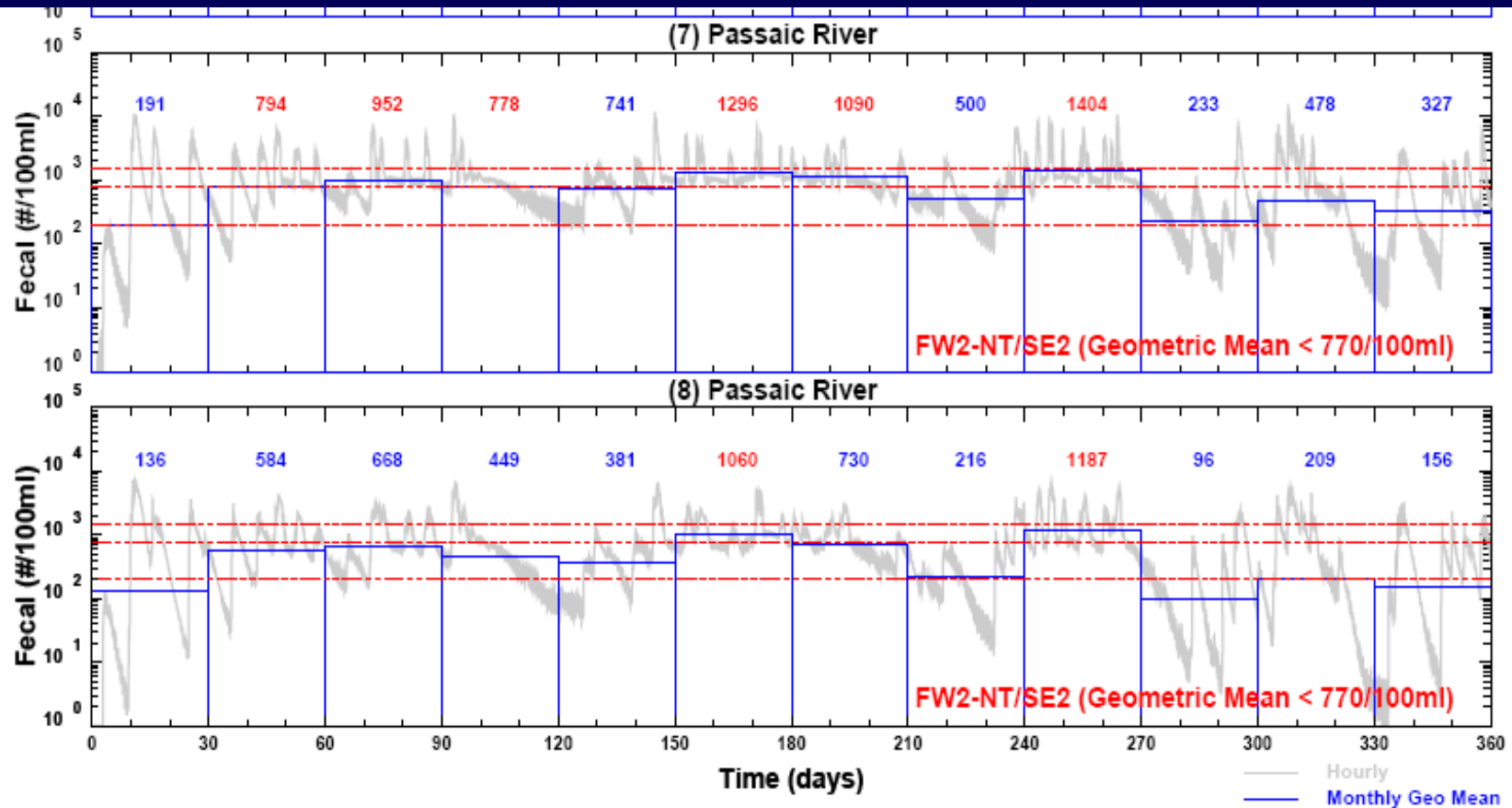
Calculated Monthly Geometric Means Average Rainfall Year



Calculated Monthly Geometric Means Average Rainfall Year

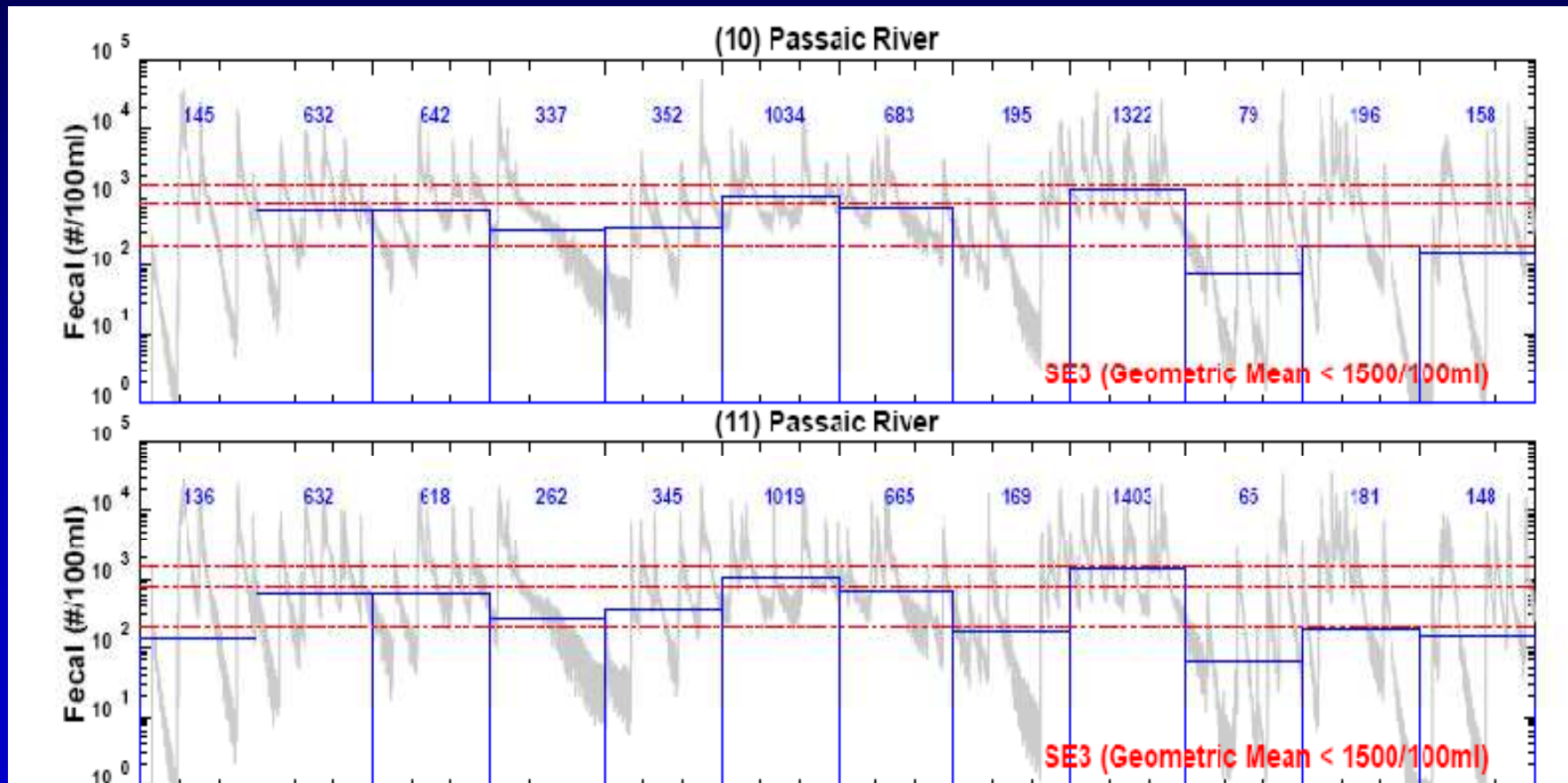


Calculated Monthly Geometric Means “Wet” Conditions - 10 Year Return Frequency



Oct 2002 - Sep 2003

Calculated Monthly Geometric Means “Wet” Conditions - 10 Year Return Frequency



Summary

Lower Tidal Passaic/Newark Bay

- **Lower Passaic River / Newark Bay**

Clay Street to Shooters Island

Below Secondary Contact Standards (SE3)

Data Analysis

Model Results – Both Average and Wet years

Summary

Upper Tidal Passaic

- **Upper Passaic River (Tidal)**

Has Dual Standard Depending on Salinity

Low Salinity – Freshwater Primary Contact

High Salinity – Secondary Contact

Data Analysis

Below Secondary Contact (SE2)

Above Primary Contact (Presumed)

Model Analysis

Average Year - Below Secondary Contact

Summer Months – Below Primary Contact

Wet Year (10 yr Return) - Above Secondary Contact

2-6 Months