



Hurricane Irene Impacts “One Year Later”

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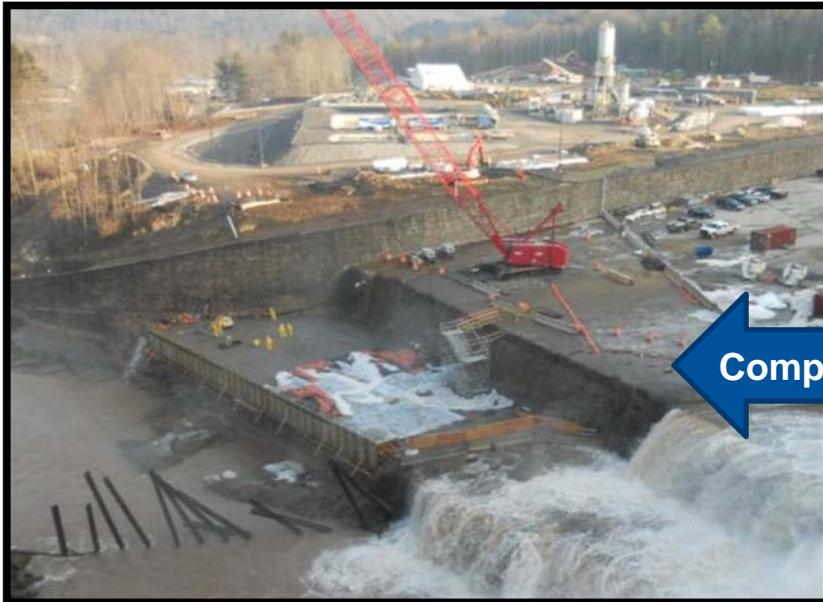
- Introduction
- Infrastructure Repairs
- Water Quality Issues & System Response
- Kensico Reservoir
- Moving Forward



Gilboa Dam



Gilboa Dam Repairs – channel step



• \$10.7 million in repairs

- Tannersville Wastewater Treatment Plant



8/31/11



8/24/12



06-07-2012

Ashokan Reservoir

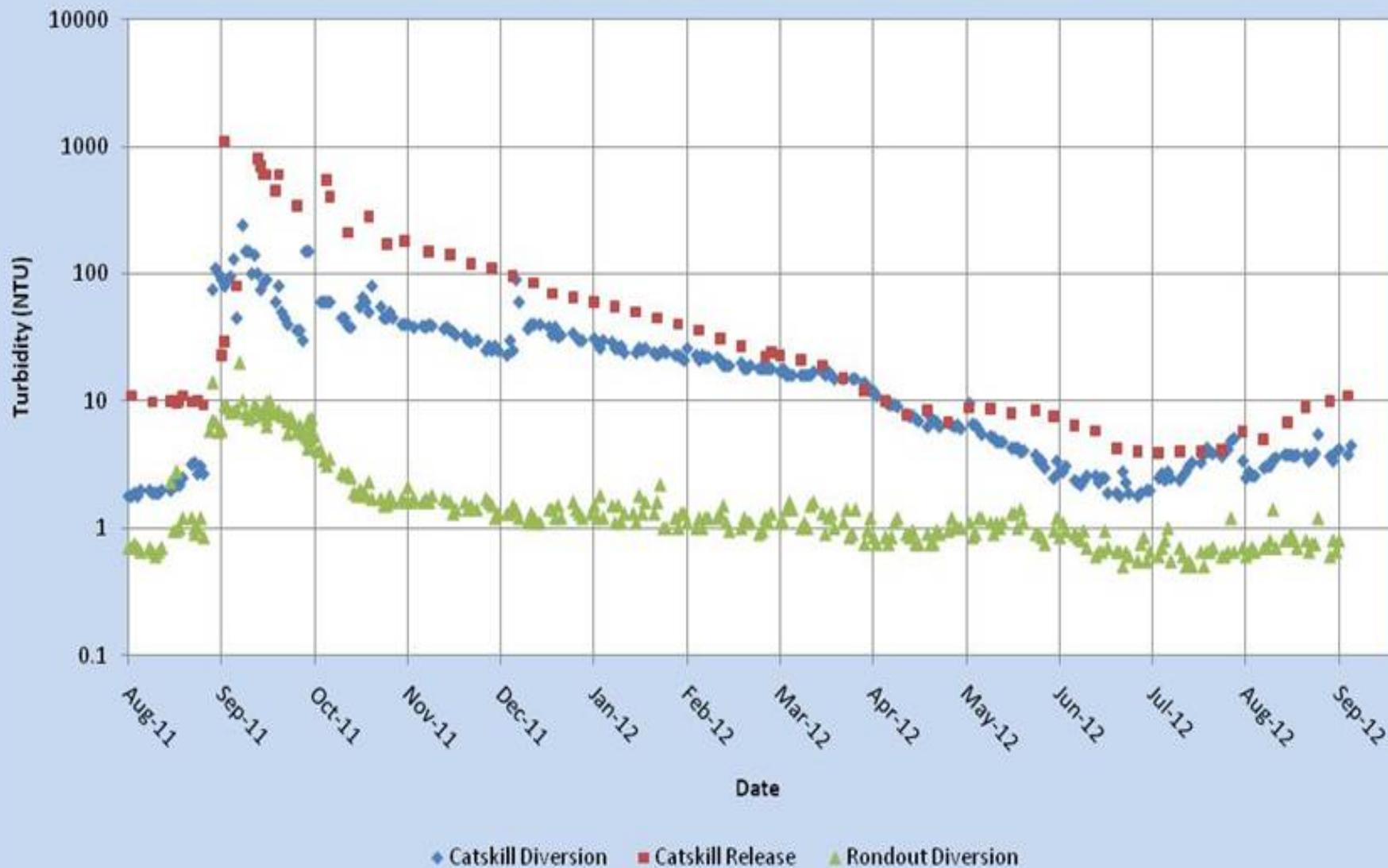


Rondout Reservoir



Reservoir Water Quality

Ashokan and Rondout Reservoir Diversion and Release Turbidity



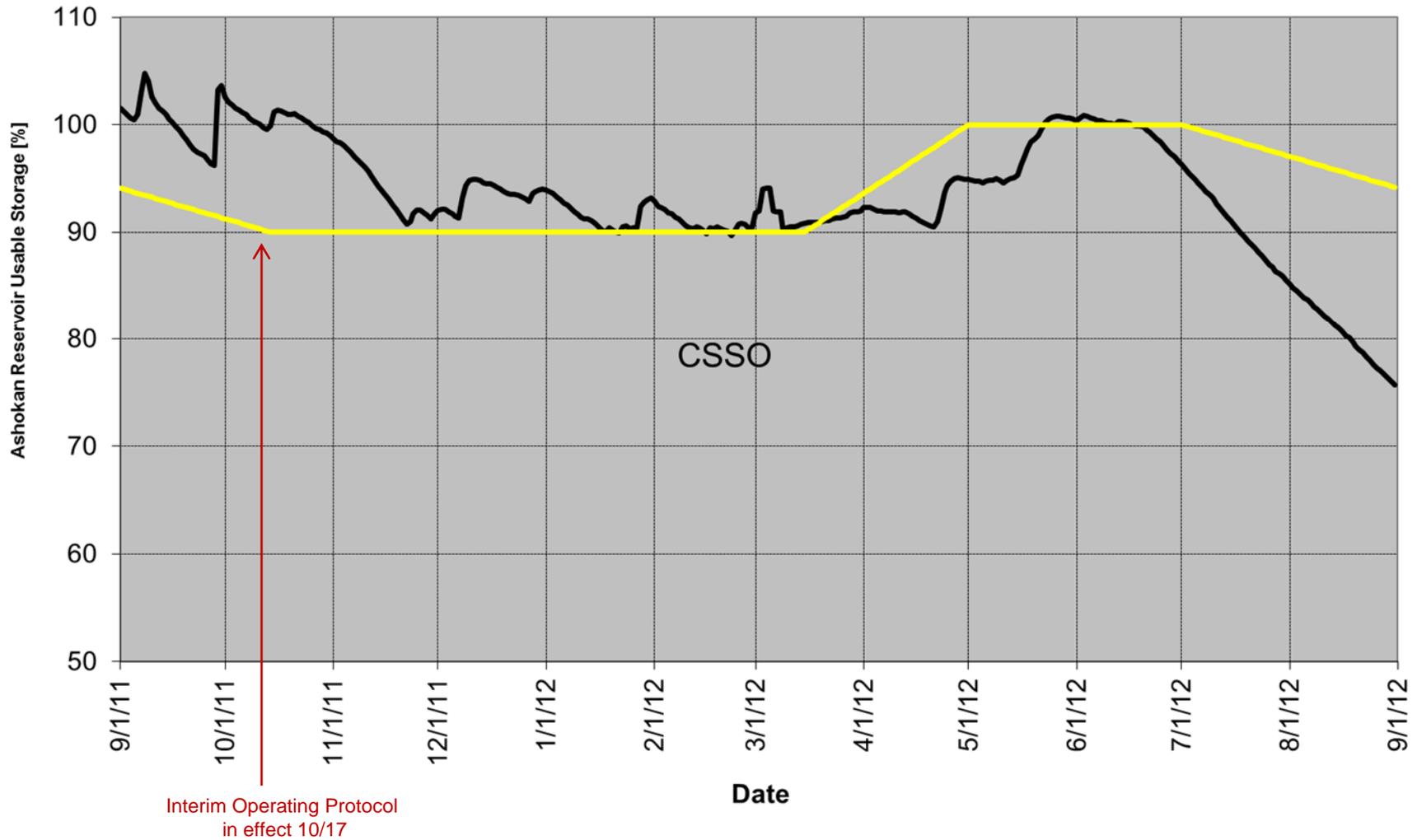
Water Supply System Response

- Alum Treatment on the Catskill Aqueduct
 - Started on 9/29/11
 - Ended on 5/15/12
 - Used approximately 2,778 dry tons

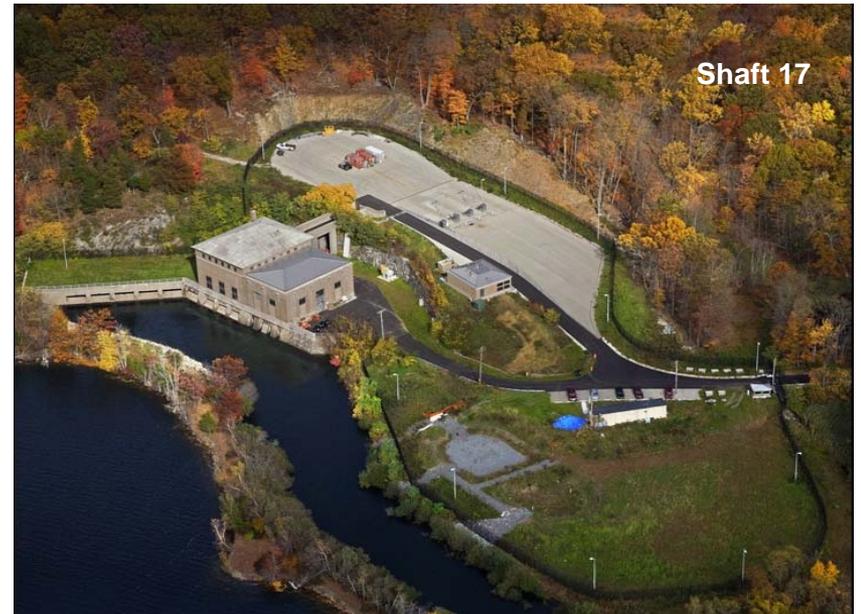


Ashokan Reservoir

2011-2012 New York City Ashokan Reservoir Conditional Seasonal Storage Objective (CSSO)



- Shaft 10 Chlorination
- Shaft 17 Dechlorination





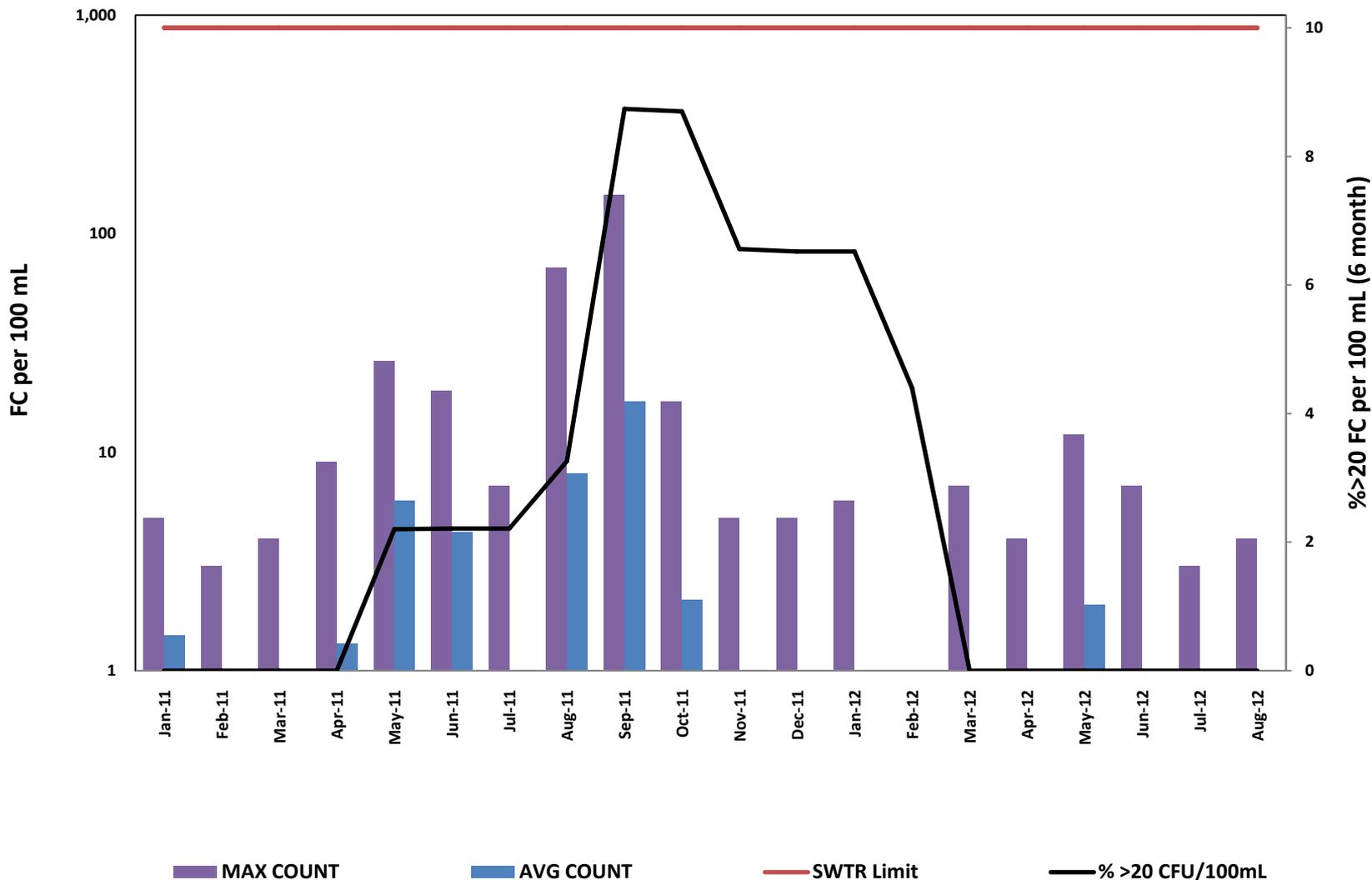
Source Water Fecal Coliform

- Surface Water Treatment Rule for unfiltered systems requires:
 - No more than 10% of samples can exceed 20 cfu/100 mL
 - Rolling 6 month average
 - DEP source identification analyses indicated predominantly non-human (e.g. wildlife) sources



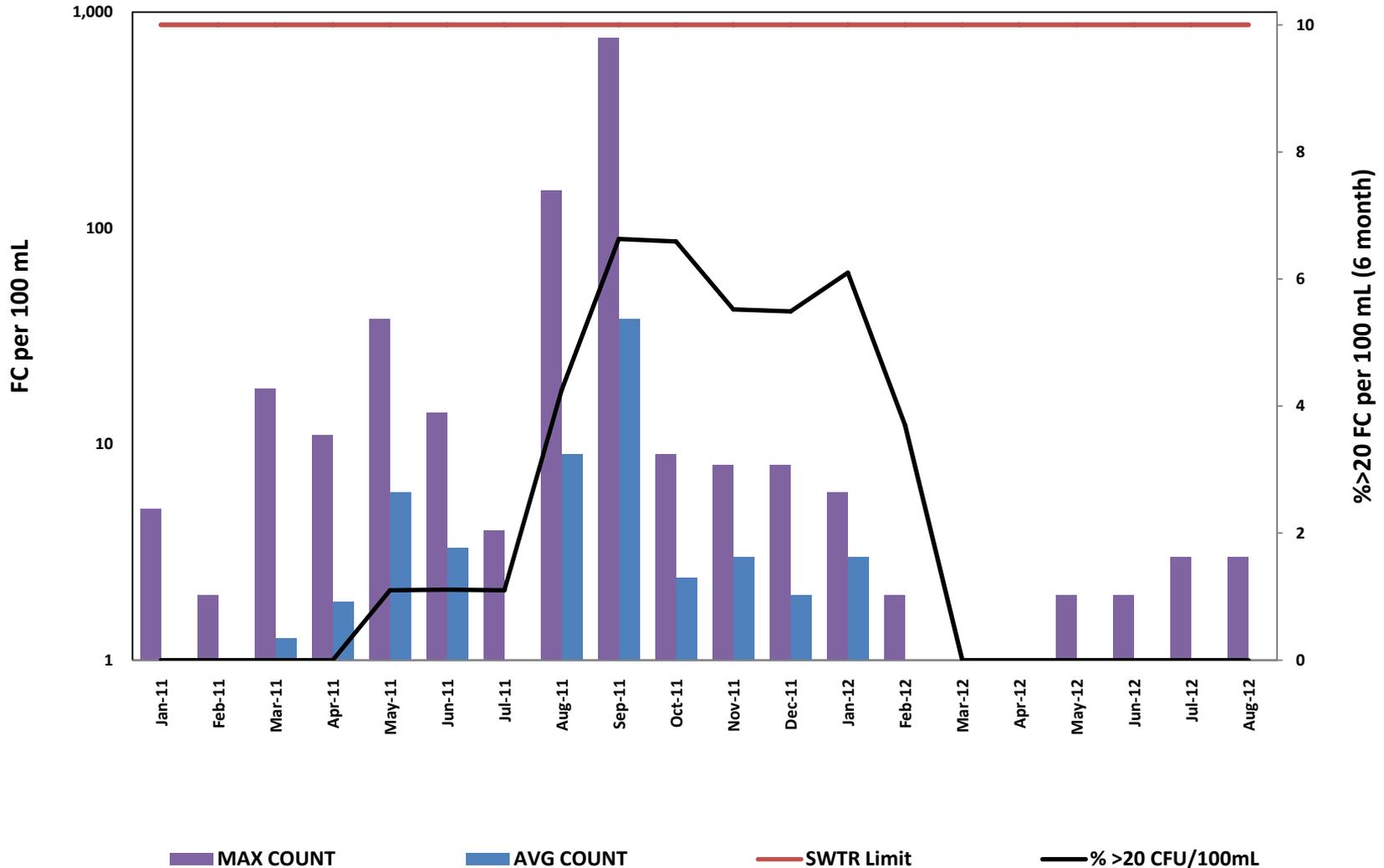
Fecal Coliform Issues

DEL18 Fecal Coliform Compliance



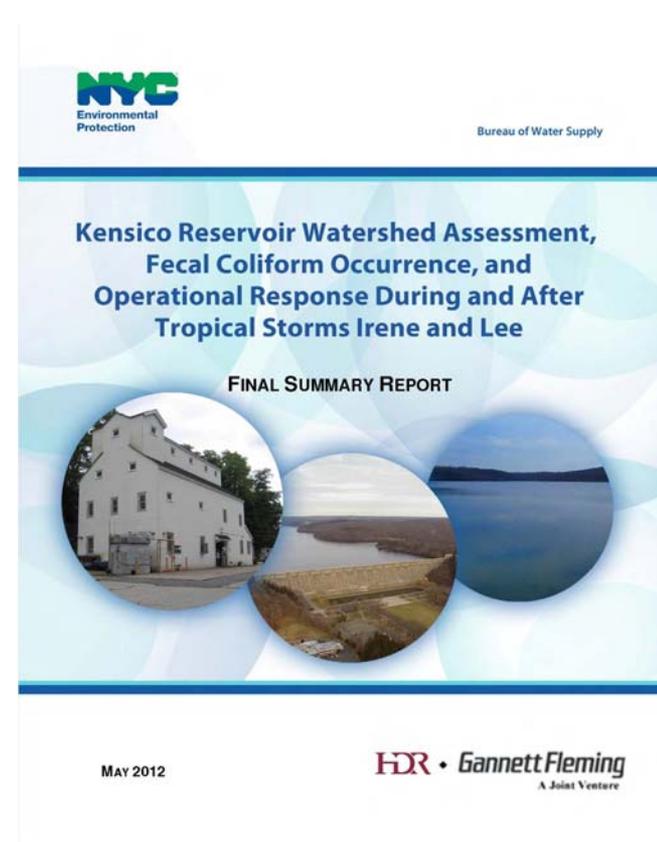
Fecal Coliform Issues

CATLEFF Fecal Coliform Compliance



Fecal Coliform Occurrence, and Operational Response During and After Tropical Storms Irene and Lee

- DEP actions based on report:
 - Develop a Hurricane Preparation Protocol
 - Ensure flushing of the Delaware Aqueduct Bypass prior to hurricane season
 - Inspect and clean BMPs prior to hurricane season
 - Prepare contracts for chemical treatments in case needed
 - Developed protocol for Kensico storm event monitoring:
 - Implemented during significant rain events
 - Identify sources of fecal coliform
 - Identify areas of highest fecal coliform load



- System operated in full compliance despite impacts
- Significant repairs made to system infrastructure
- Learn from response:
 - Completed study on fecal coliform issue at Kensico
 - AAR completed
 - Improvement plan developed
 - Ensure plans turn into actions



