



CITY OF FORT COLLINS  
WATER TREATMENT FACILITY



# Mission

## Provide Community with:

- Continuous ample supply of treated water
- Pleasing to taste
- Free from known health risks
- Affordable



# Overland Waterworks



Original waterworks building constructed in 1882.



# Water Plant #1



# Water Plant #2



# Water Production Division Organization

- Source of Supply
- Watershed
- Treatment Plant Operations and Maintenance
- Reservoirs and Off-site Pump Stations



# Source of Supply – from the mountains to your tap









# Clearing Road and Ditch



# Michigan Ditch



# Joe Wright Reservoir

## 7161 Ac Ft - 1979





# Quality Starts at Watersheds



- Cache la Poudre Watershed



- Horsetooth Watershed






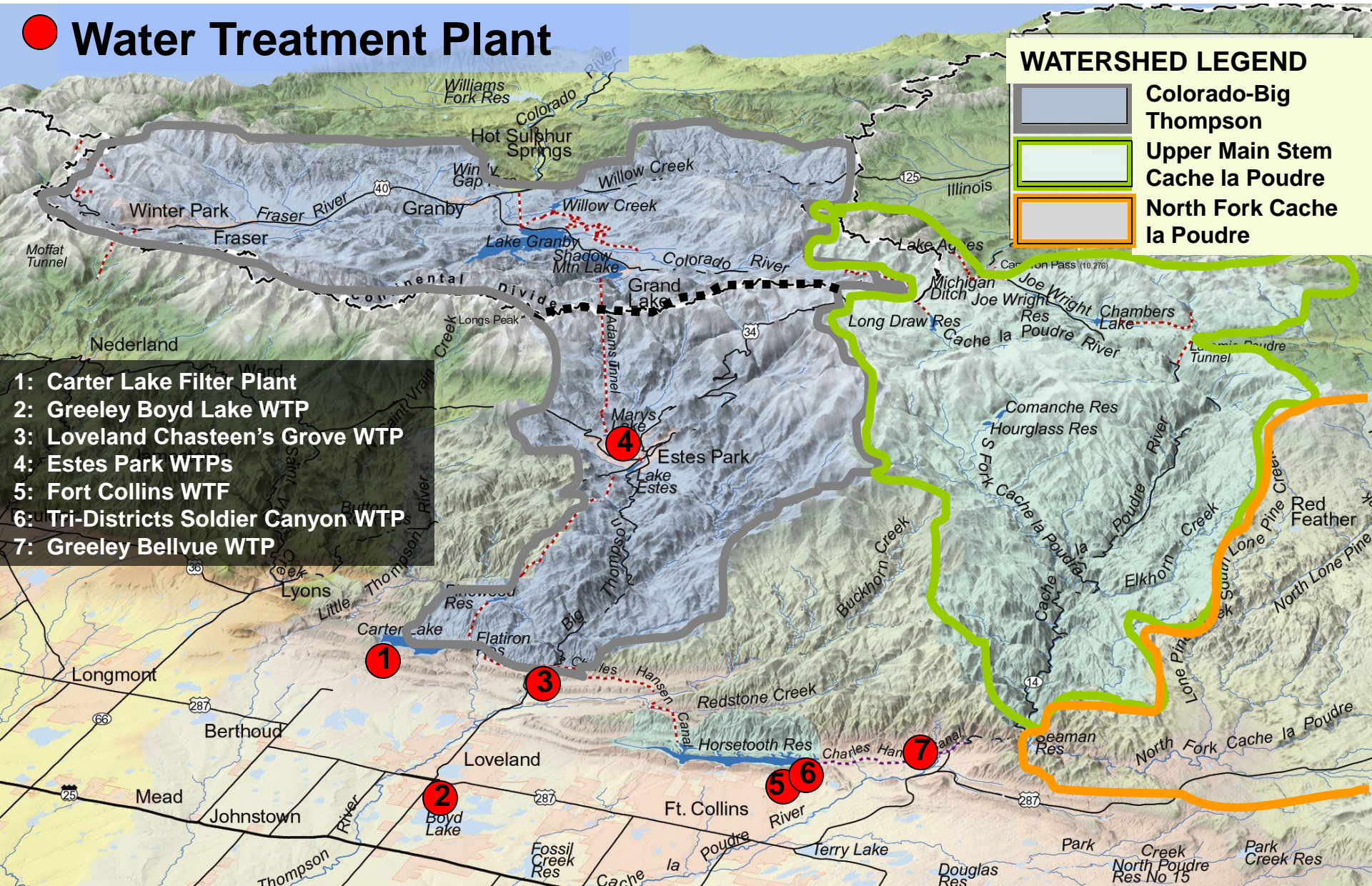


# Our Shared Watersheds

## ● Water Treatment Plant

**WATERSHED LEGEND**

-  Colorado-Big Thompson
-  Upper Main Stem Cache la Poudre
-  North Fork Cache la Poudre



- 1: Carter Lake Filter Plant
- 2: Greeley Boyd Lake WTP
- 3: Loveland Chasteen's Grove WTP
- 4: Estes Park WTPs
- 5: Fort Collins WTP
- 6: Tri-Districts Soldier Canyon WTP
- 7: Greeley Bellvue WTP



# CLP Watershed

- Michigan Ditch
- Joe Wright Reservoir
- Halligan Reservoir





# Horsetooth Sampling

- Watershed sampling crew on Horsetooth Reservoir.

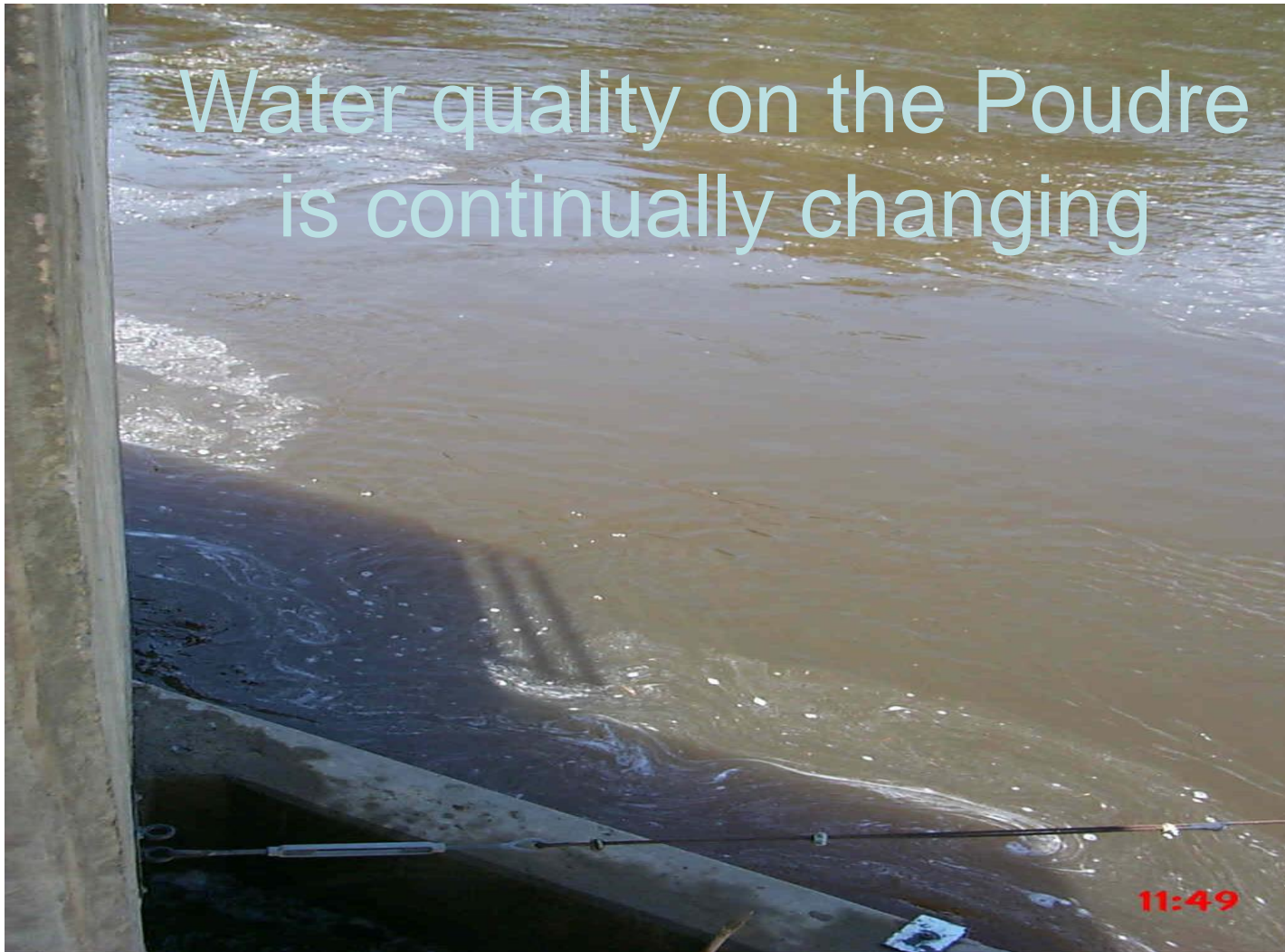


# Monitoring Programs

- **Upper Cache la Poudre (CLP) Collaborative Water Quality Monitoring Program**
- **Horsetooth Reservoir Water Quality Monitoring Program**
- **Big Thompson Watershed Forum**
- **Emerging Contaminants and Wildfire Assessments**



Water quality on the Poudre  
is continually changing

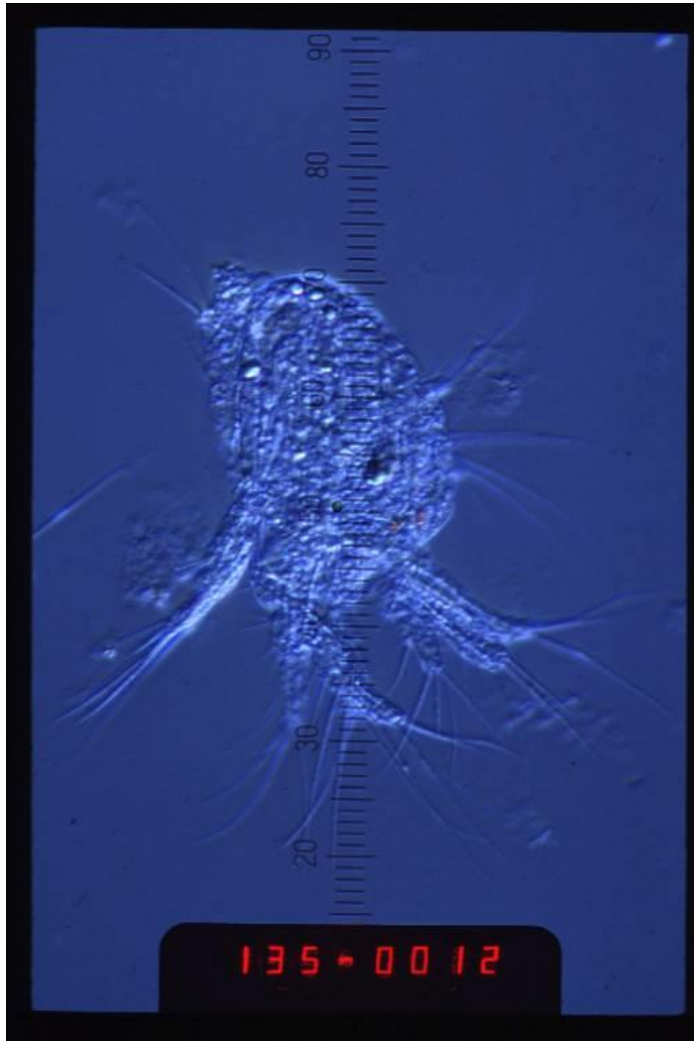




# Poudre River Quality affected by many variables



# Contaminants



## Why is Waterborne Cryptosporidium of Concern?



- ▶ Common in water
- ▶ Infects a variety of animals
- ▶ Highly resistant to disinfectants
- ▶ Difficult to filter
- ▶ No treatment for humans
- ▶ Fatal infection in some people

*Cryptosporidium*  
(oocyst)

CDC



# Car Wreck





# Drought





Forest Fire







# Asphalt Spills





# WTF Programs

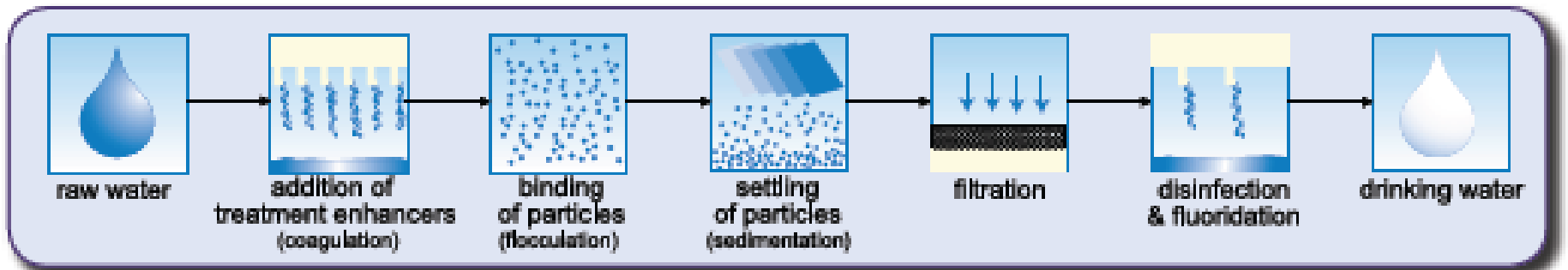
- Partnership for Safe Water
- CO Environmental Leadership Program
- Environmental Management System
- Xcel 2012 Efficiency Partner



# Solar Facility



# Process

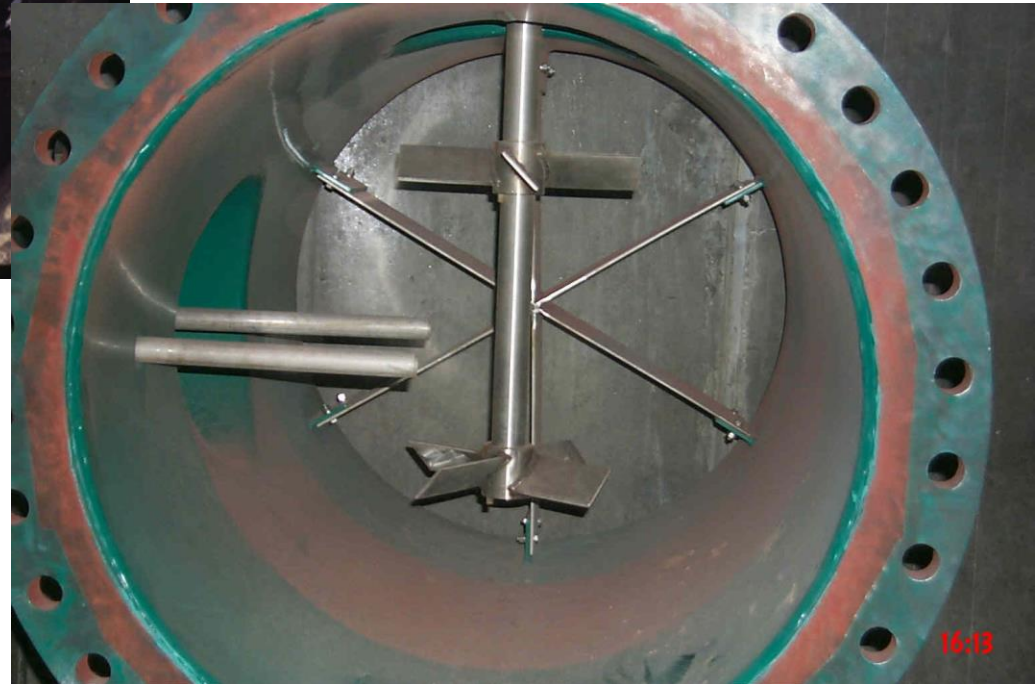
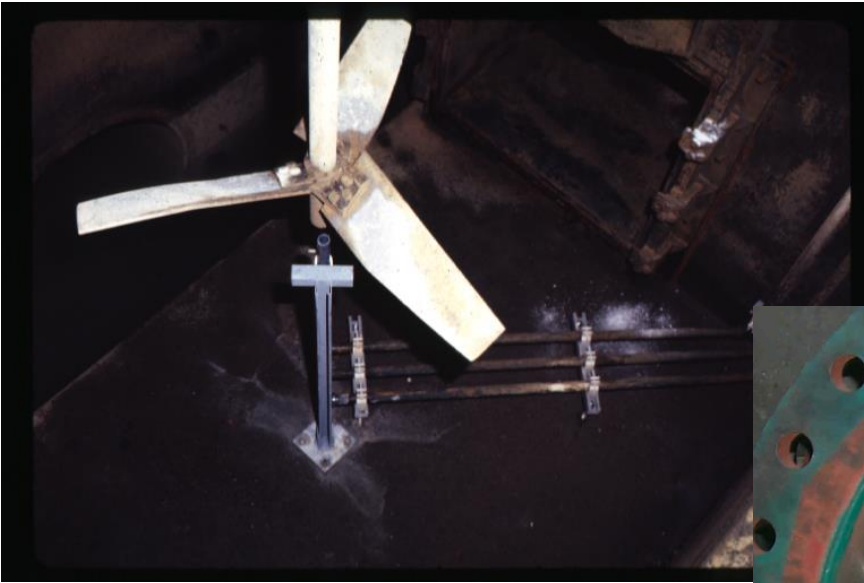


*Fort Collins Utilities' Water Treatment Facility is designed to treat a maximum of 87 million gallons of water per day under normal conditions. With this facility Fort Collins Utilities will be able to meet future challenges and demands for water treatment.*

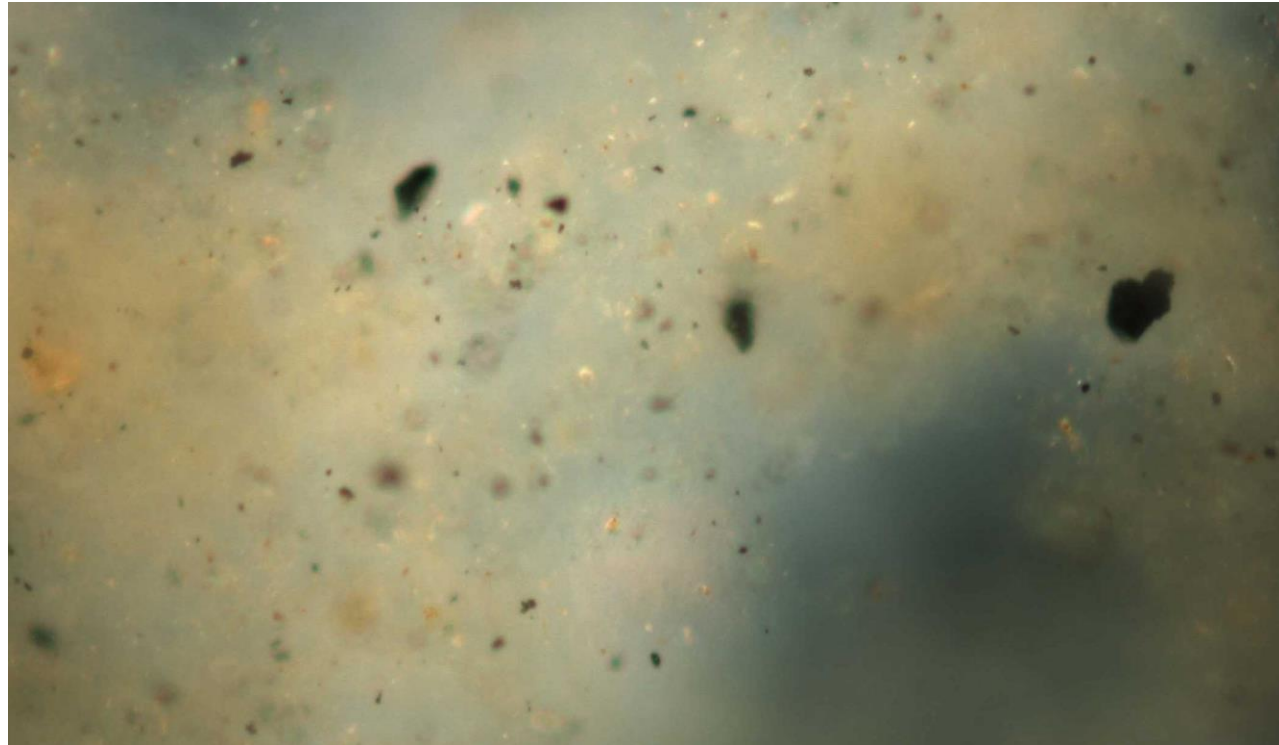




# Rapid Mix



# “FLOC”



# Flocculation





# Sedimentation

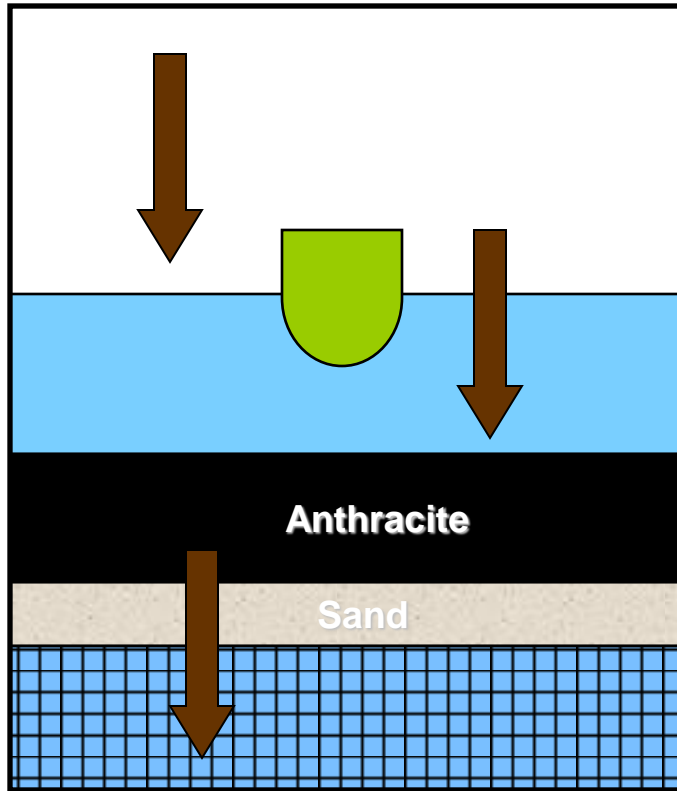


# Filters

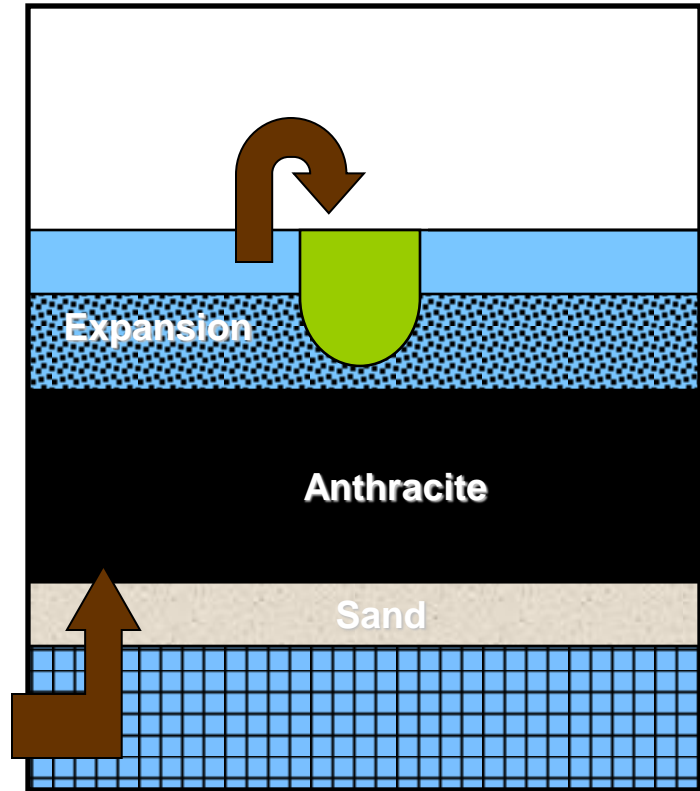


# Filtration Process

## Filtering



## Backwashing





# Disinfection/Final Polishing

- Chlorine for Disinfectant
- Fluoride
- Lime for alkalinity adjustment
- Carbon dioxide for pH adjustment



# Solids Residual Management Program



# Finished Water Storage

- On-site two gallon reservoirs
- One reservoir for southwest
- One reservoir for north
  
- All with high security measures in place



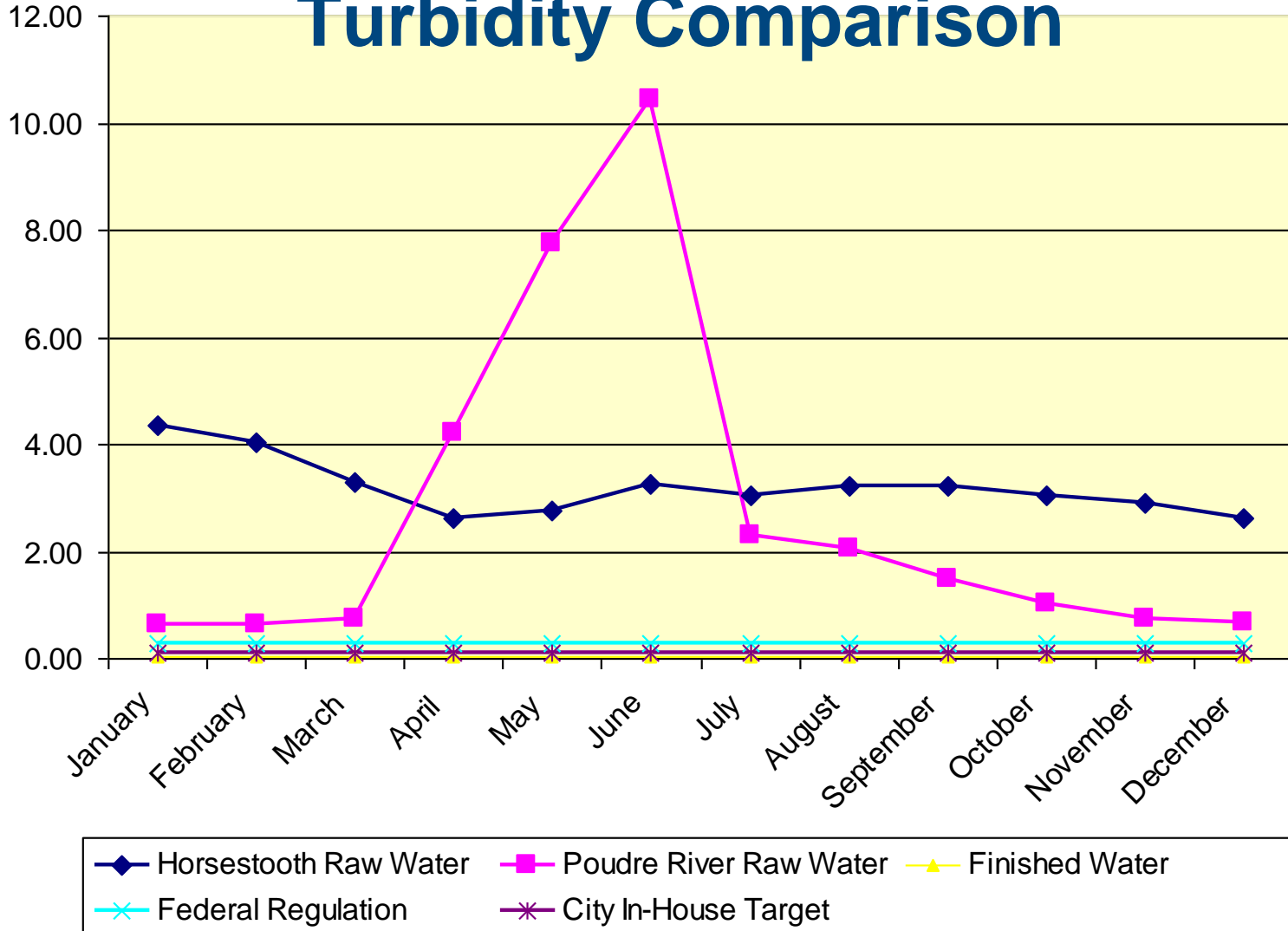


# Target Quality Parameters

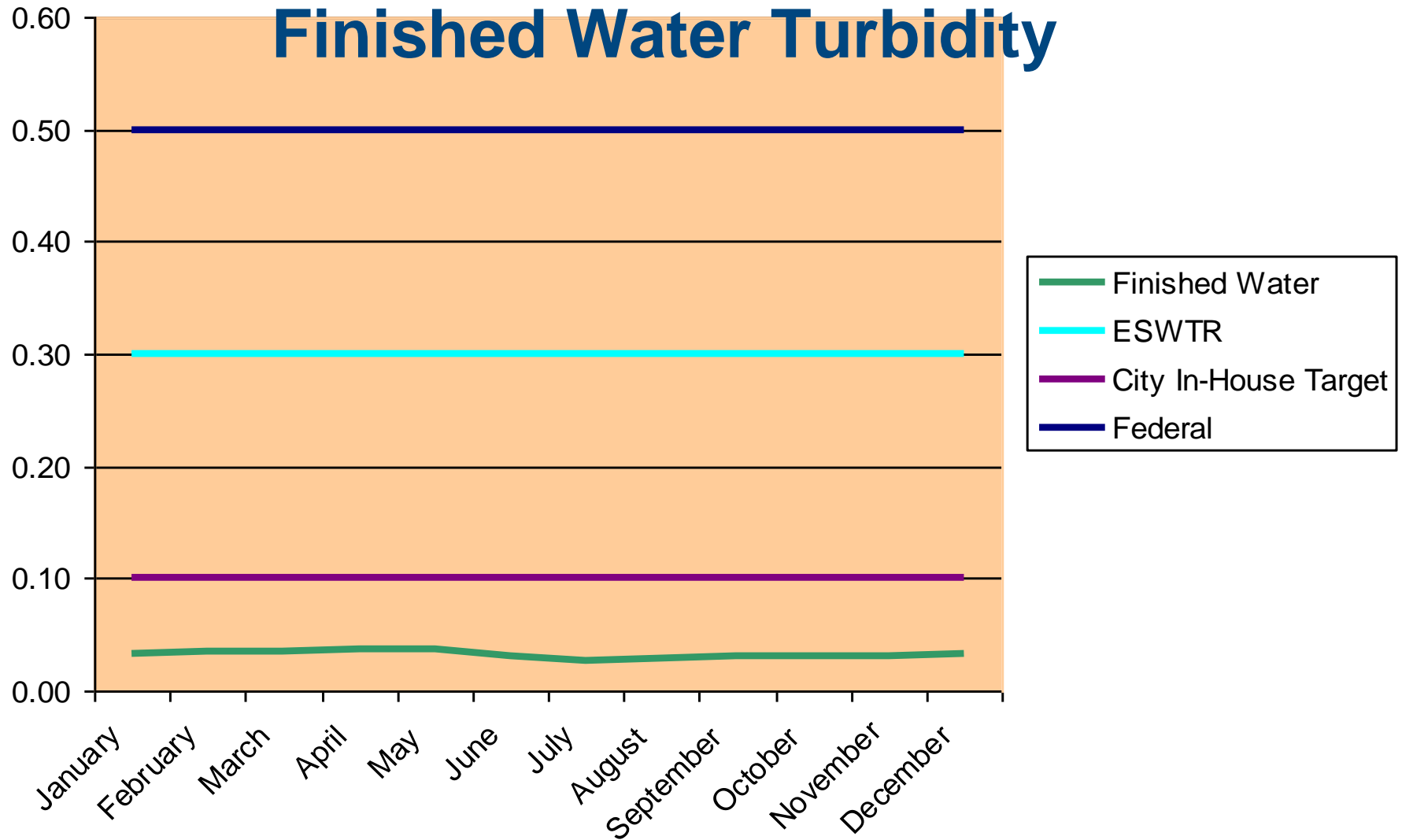
- | <u>Parameter</u>                  | <u>Target Value</u>        |
|-----------------------------------|----------------------------|
| pH                                | 7.8-8.00 standard units    |
| Total alkalinity                  | 36 – 40 mg/L CaCO          |
| Free chlorine                     | 0.70 – 0.80 mg/L           |
| Turbidity                         | <0.10 ntu at all times     |
| Fluoride                          | 0.90 – 1.05 mg/L           |
| Dissolved Aluminum                | < 30 ng/L                  |
| Color                             | < 2.5 standard color units |
| Manganese                         | < 5.0 ng/L                 |
| Chlorite (finished water)         | < 0.6 mg/L                 |
| Chlorine Dioxide (finished water) | < 0.2 mg/L                 |



# Turbidity Comparison

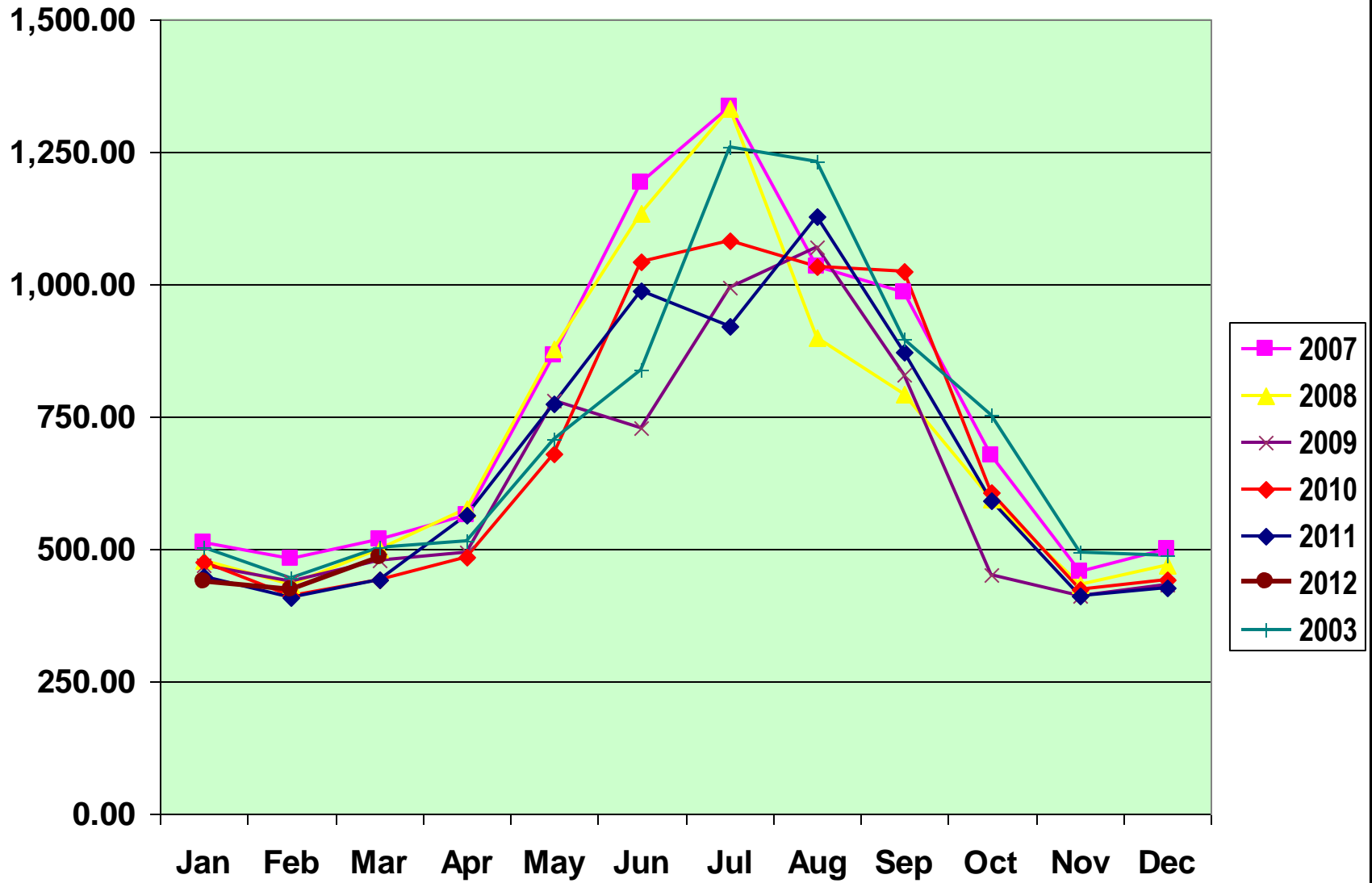


# Finished Water Turbidity





# WTF Monthly Flow Rates (million gallons)



# Distribution Monitoring



- Weekly
- Monthly
- Flushing
- Water Quality Response
- Valve and Hydrant Maintenance



**For More Information:**

**Call: 970-221-6690**

**or visit**

**[www.fcgov.com/UTILITIES](http://www.fcgov.com/UTILITIES)**





The key: Our Staff makes  
the difference!

