

Charleroi, PA Satellite Treatment for CSO Control – From Concept to Reality

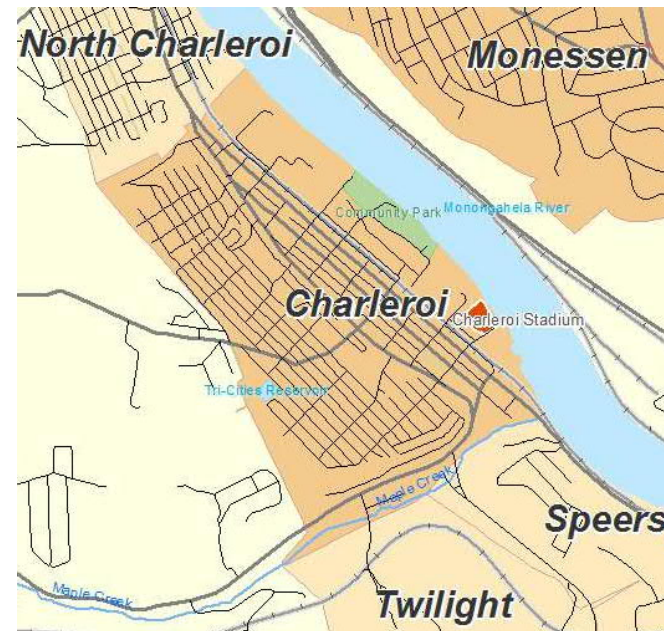
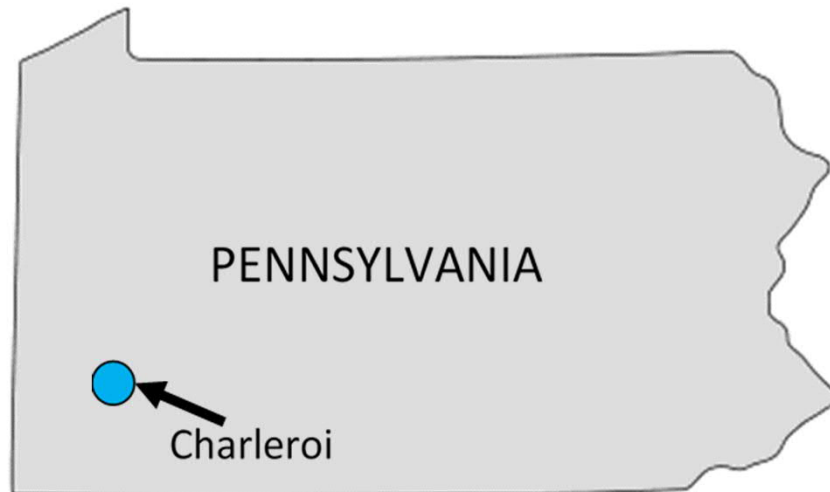
WWETCO FlexFilter™ System

WESTECH

Presented by:
Sarah Willett
WesTech Engineering, LLC.

Get to Know Charleroi, PA

- Inhabited in 1890 and incorporated in 1891
- 25 miles south of Pittsburgh
- Borders the Monongahela River to the east
- Population ~4,000



Project Overview

- Long-term control plan for CSOs
- 10 MGD of treatment
- Solution needed to be economical and feasible



100 MGD WWETCO FlexFilter EHRT for CSO Treatment



Why Compressible Media Filtration?

- Unmanned, automatic operation
- No chemical usage for solids removal
- Ability to sit dry and empty
- Compression achieved with hydraulic force
 - No moving parts within filter



Pilot Testing Summary

- Testing conducted at WWTP
- Fifteen events over 6-month testing period
 - December to June
- Event durations ranged from 4 to 30 hours
 - 12.8-hour average
- Operated fully unmanned



6-Month Pilot Study Set-Up



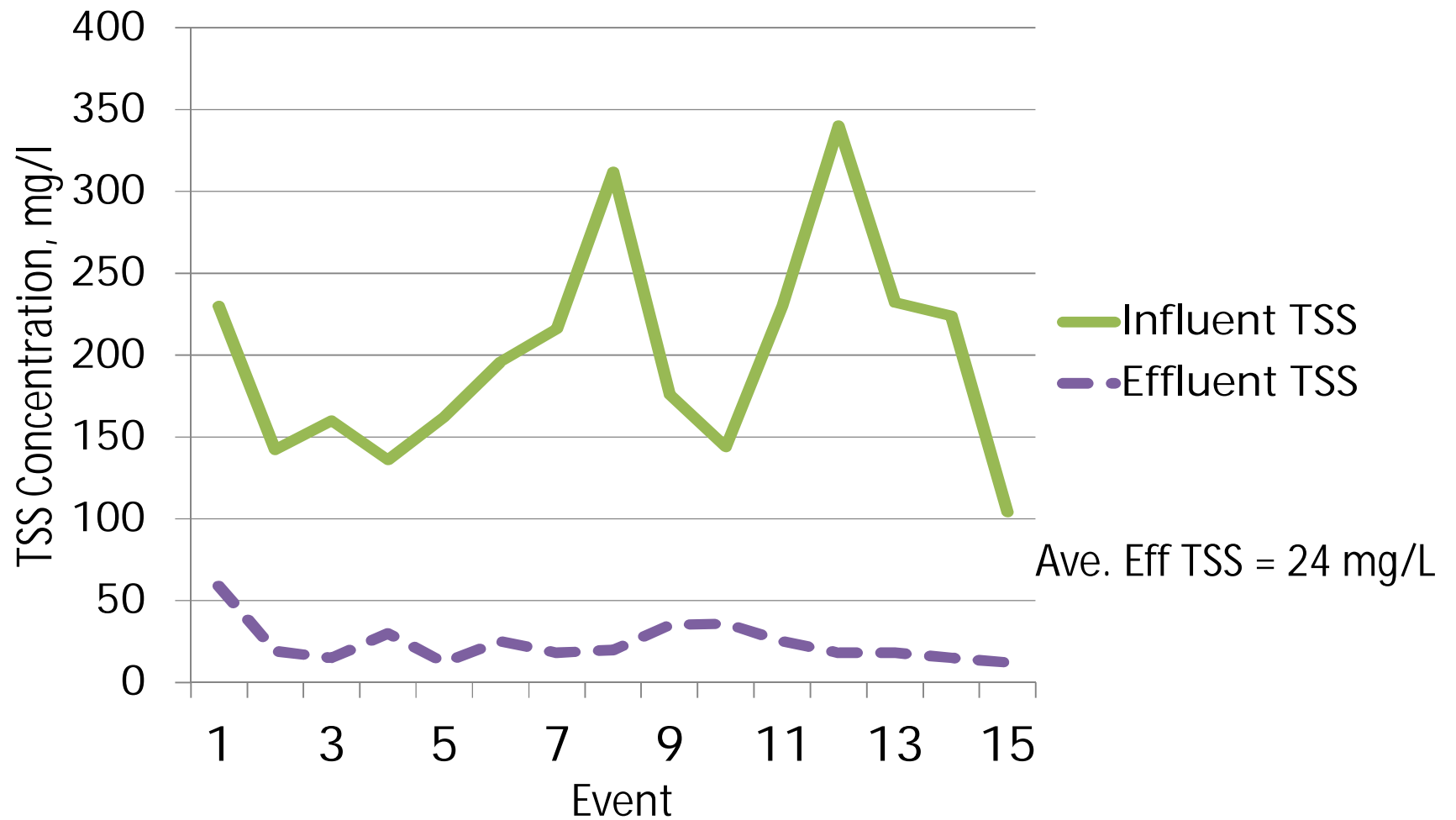
Pilot trailer containing FlexFilter set up to receive primary influent wastewater during wet weather flow

Two-foot diameter FlexFilter column

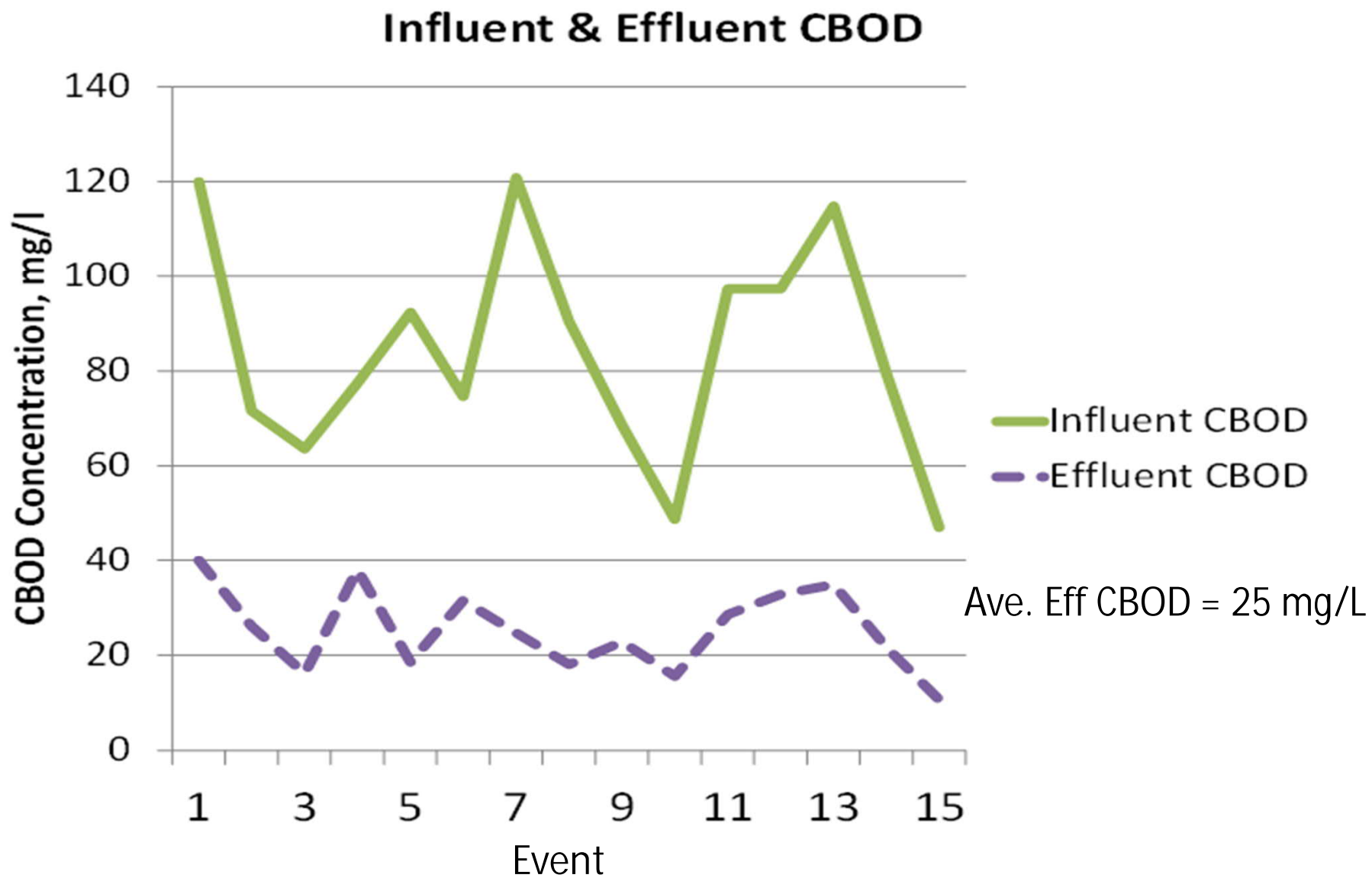


TSS Data

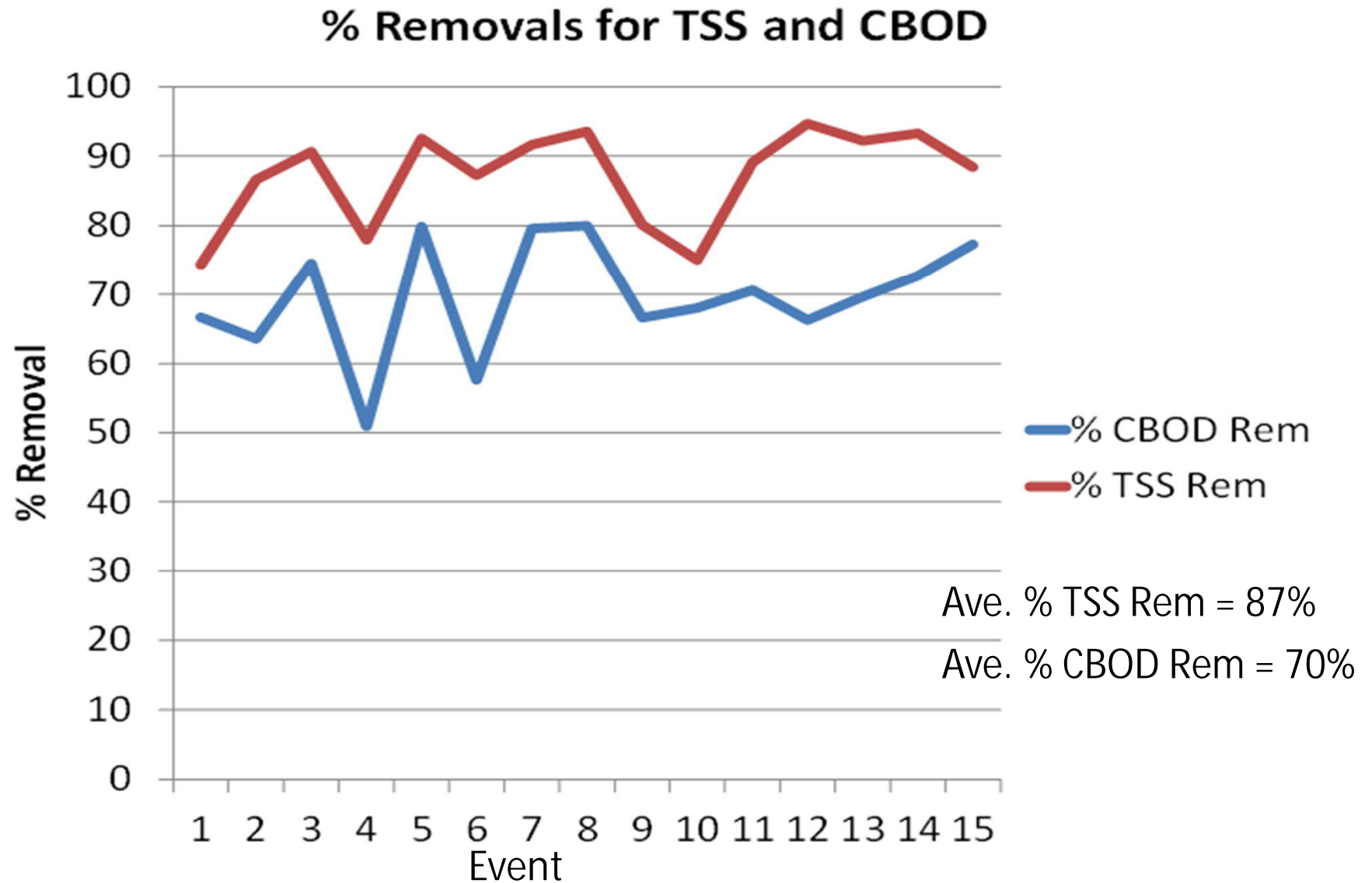
Influent & Effluent TSS



CBOD Data



% Rem Data



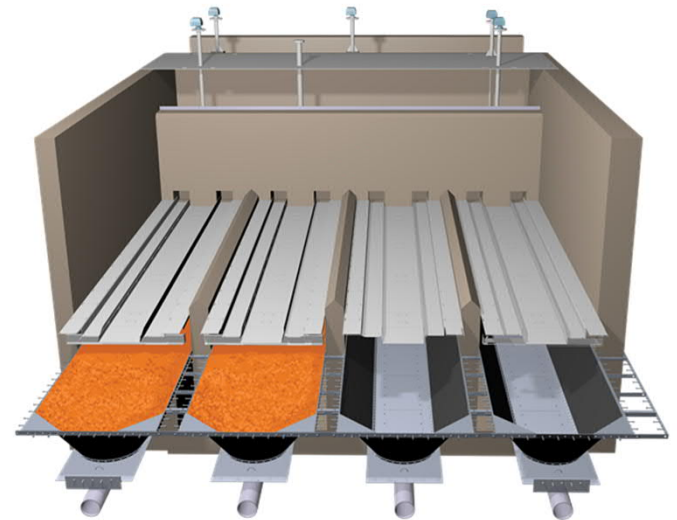
Pilot Testing = Success!

- Met pilot study objectives
 - Operated fully unmanned
 - Effluent met secondary treatment criteria
- Moving forward with full scale design



Full Scale Design Considerations

- Screening and pumping
- Post-event clean-up
 - Storage for backwash water
- Properly programmed controls
- Compact footprint



Effluent
Pumping

UV Disinfection

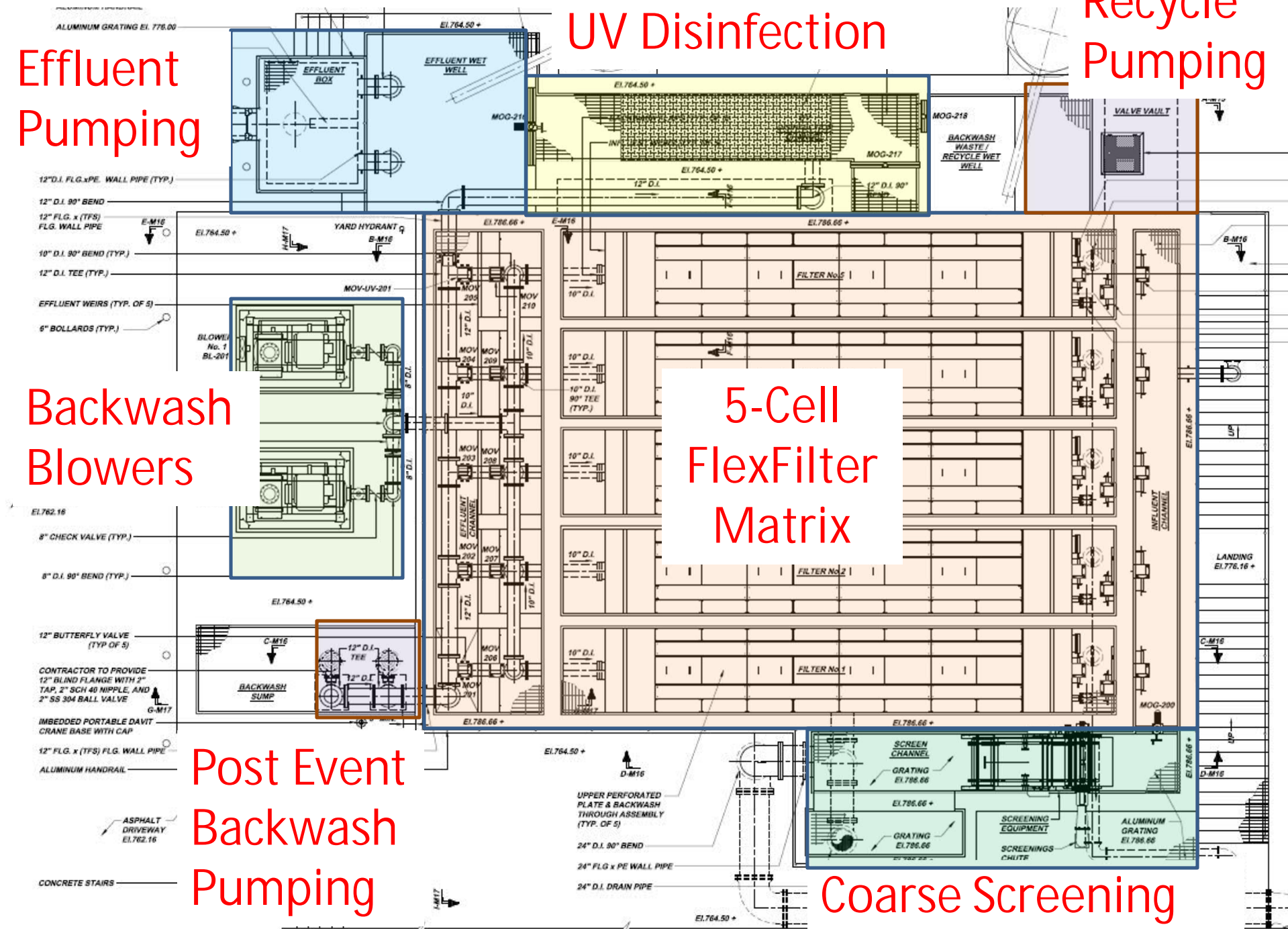
Recycle
Pumping

Backwash
Blowers

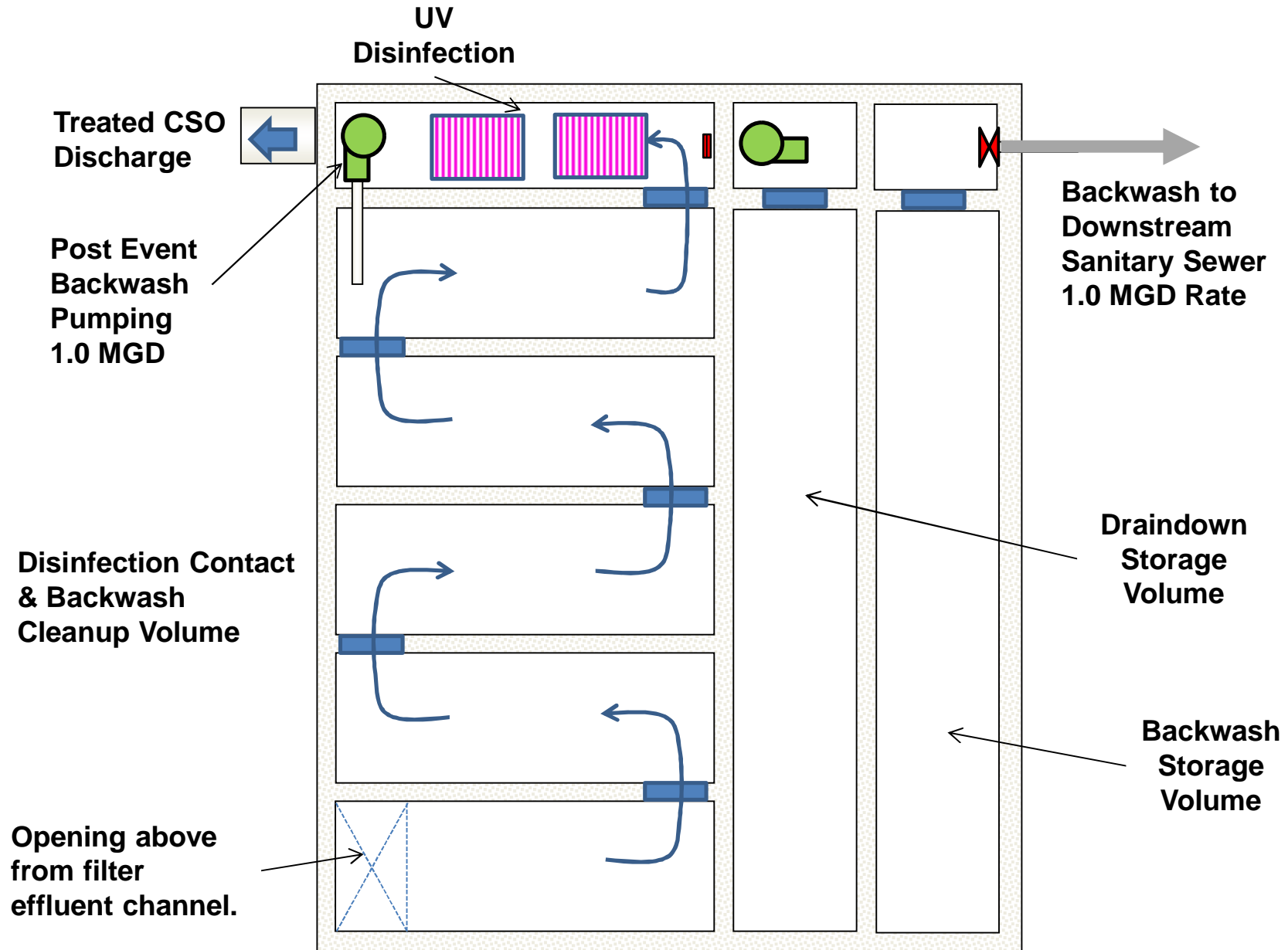
5-Cell
FlexFilter
Matrix

Post Event
Backwash
Pumping

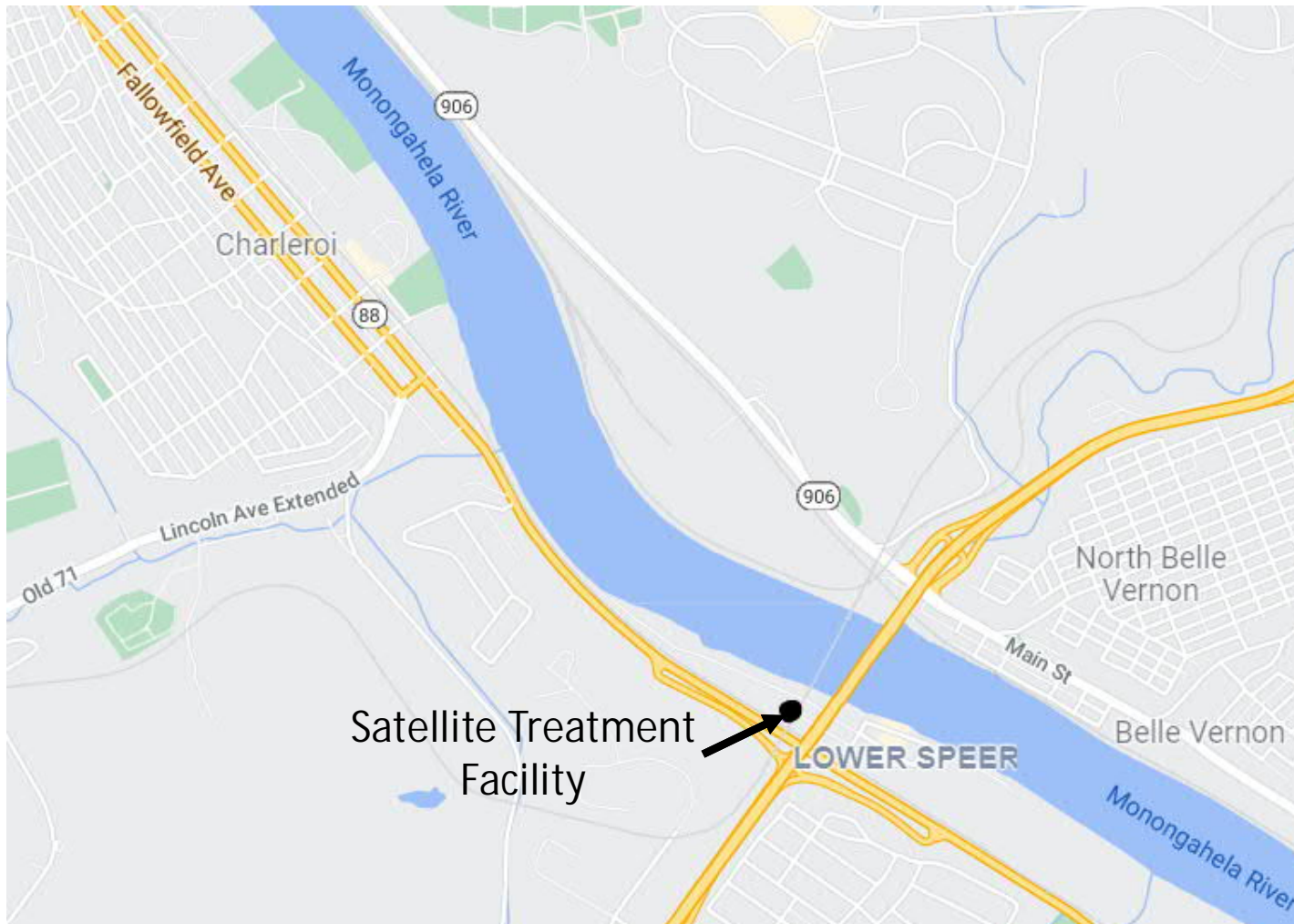
Coarse Screening



Lower Plan



Treatment Location



Early Construction Photo

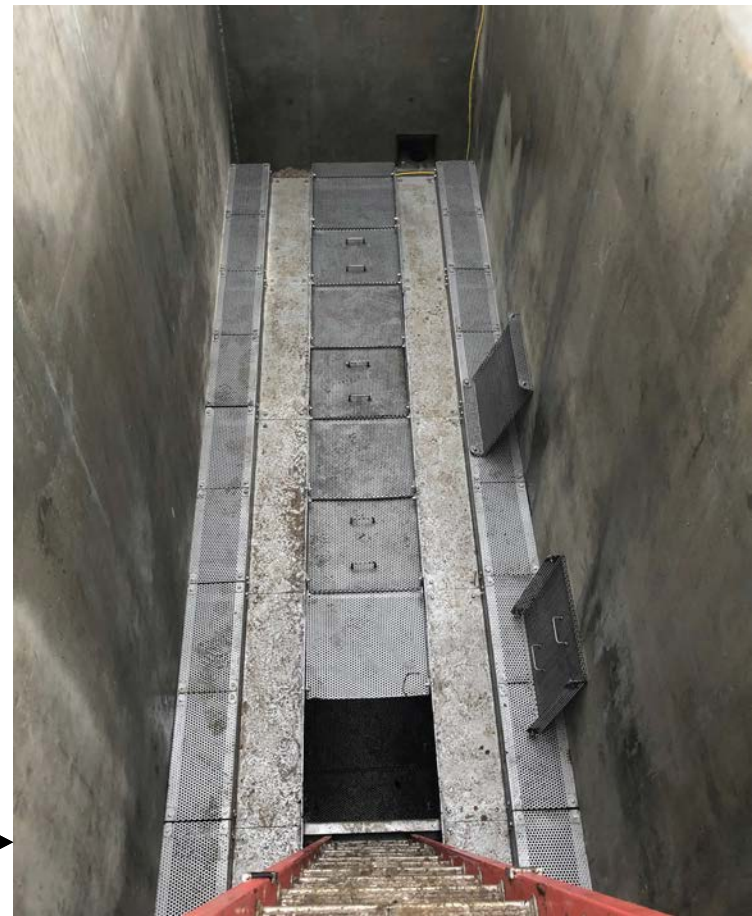


Filter Cell Construction



View from inside filter cell
with bladder installed

View looking down filter
cell at top perforated plate



Construction Continues

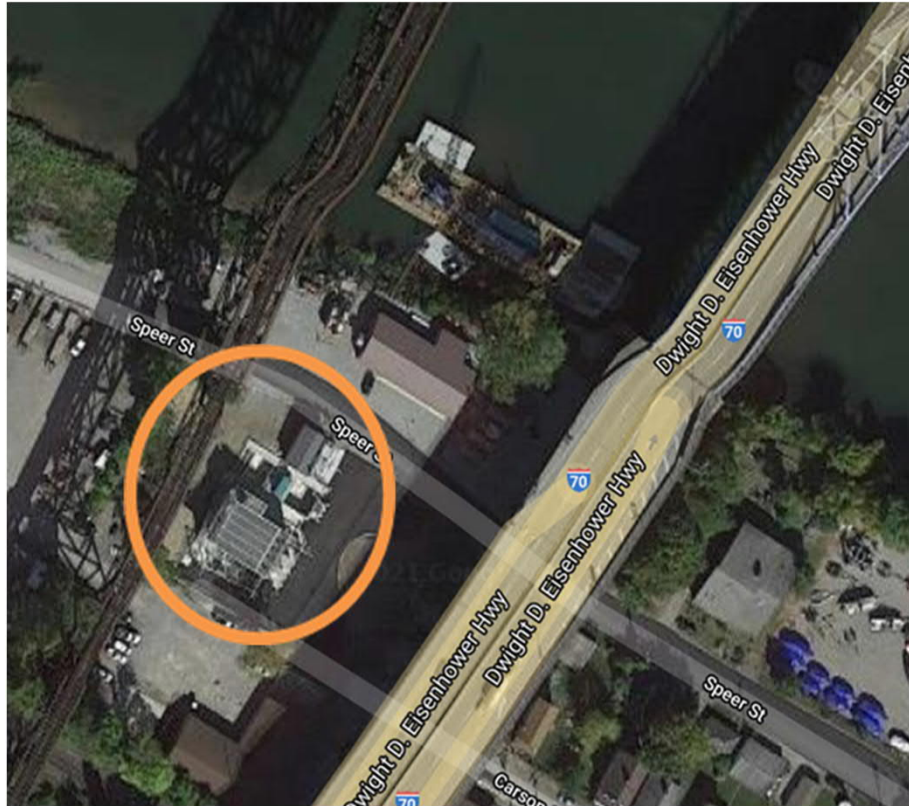


View from the ground
next to the compressible
media filtration structure

View from the top
of the compressible
media filters



Google Map Photos



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