Engineering a Flexible High Performance Industrial Wastewater Treatment Facility

A Case Study of a Leading Chocolate Manufacturer Wastewater Treatment Project

WATER TECHNOLOGIES

Agenda

About Veolia Water Technologies

Common Drivers for Industrial Pretreatment

Project Background

Wastewater Facility Virtual Tour
Key Technology Highlights

System Performance Results

Q&A

About Veolia Water Technologies

WATER TECHNOLOGIES

FOOD & BEVERAGE WASTEWATER CAPABILITIES

Veolia Water Technologies is world class at solving wastewater challenges by engineering and installing reliable treatment processes that meet the environmental and business objectives of our customers.

35+ Years of Industry Experience

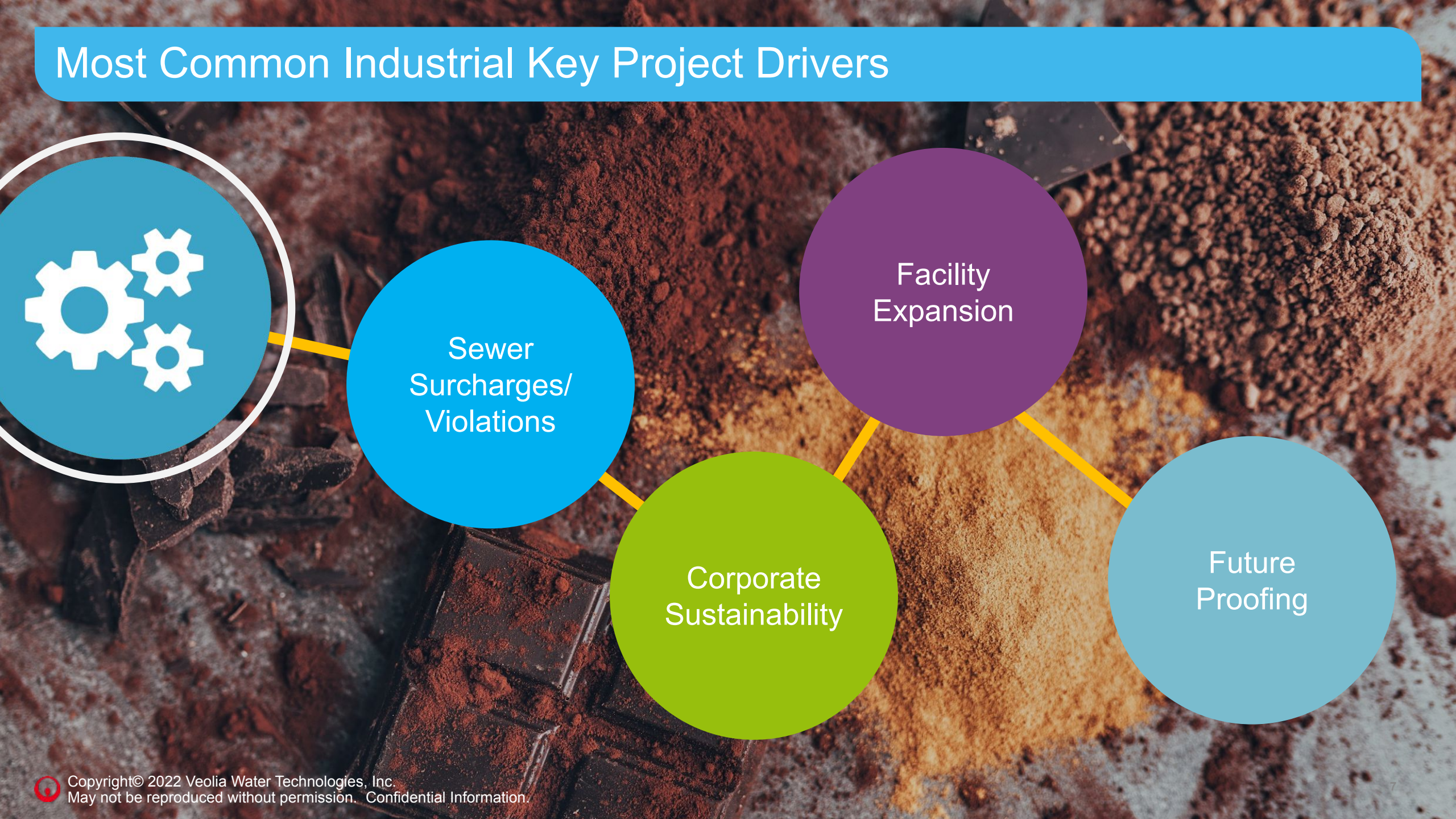
150+ North American Industrial Wastewater References

100% Committed to Ensuring a Successful Project

Providing Wastewater Treatment Solutions for Leading Companies

Common Drivers for Industrial Pretreatment

Most Common Industrial Key Project Drivers



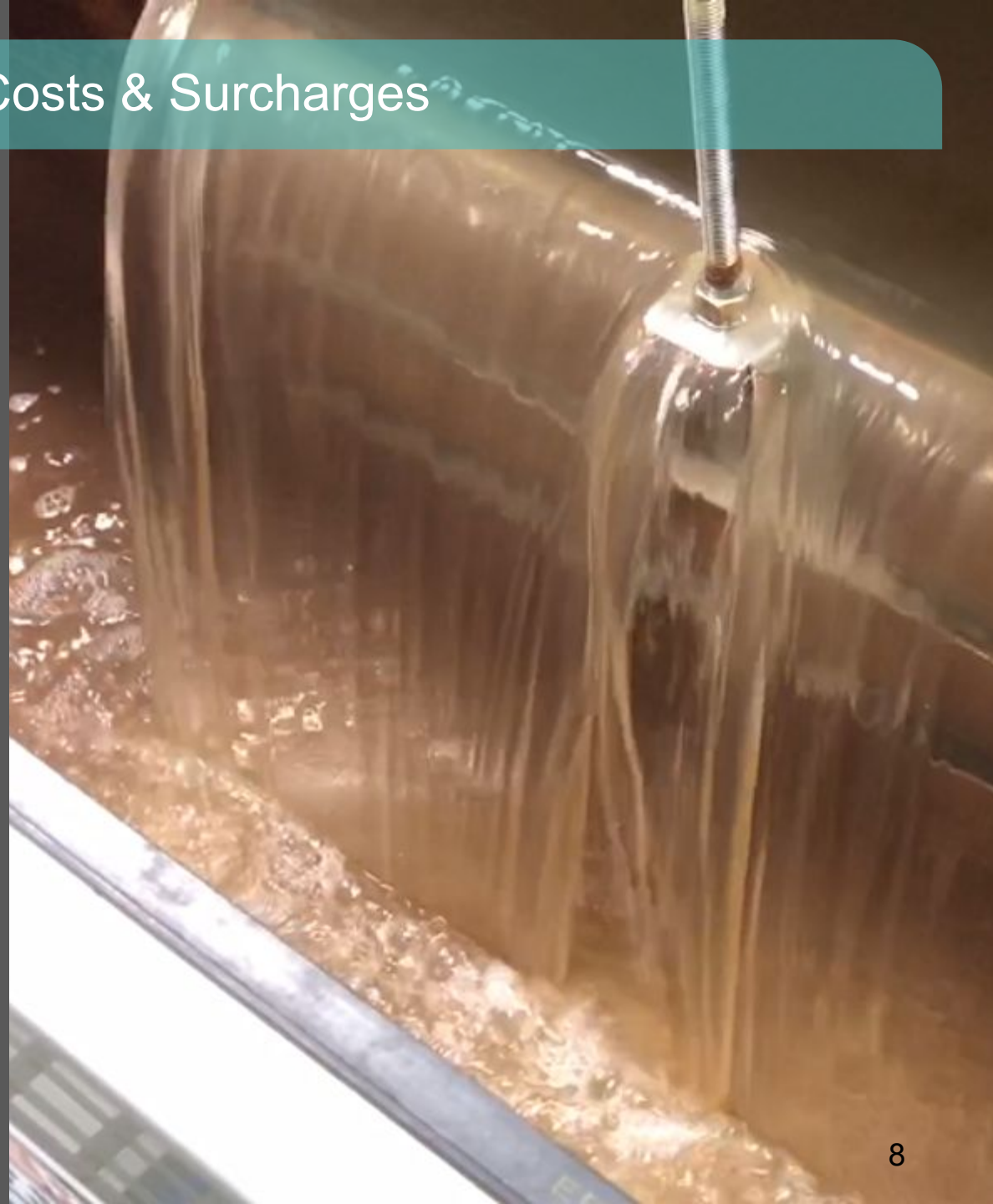
Main Ways to Reduce Wastewater Treatment Costs & Surcharges

Water audits to reduce wastewater generation (flow and load)

Reduce TSS/FOG surcharges – solids removal with DAF (Dissolved Air Flotation)

Reduce BOD surcharges – biological treatment technologies (anaerobic and/or aerobic)

Reducing other surcharges/limits (TDS, COD, N and P) may require full treatment – get off the sewer?



Project Background

"First-of-its-kind" Wastewater Treatment Facility

Project Overview

About the Project
A leading chocolate manufacturer was looking to enhance the quality of its effluent and secure the manufacturer's current and future wastewater treatment needs at its flagship manufacturing campus.

KEY DRIVERS: Future Proofing & Replace Outdated Wastewater Facility

PROJECT DESIGN BASIS

Influent Parameters

Influent Flow: 500-850 gpm
Peak Flow: 1 MGD

Total COD: 20,000-35,000 lb/day

TSS: 200-500 mg/l

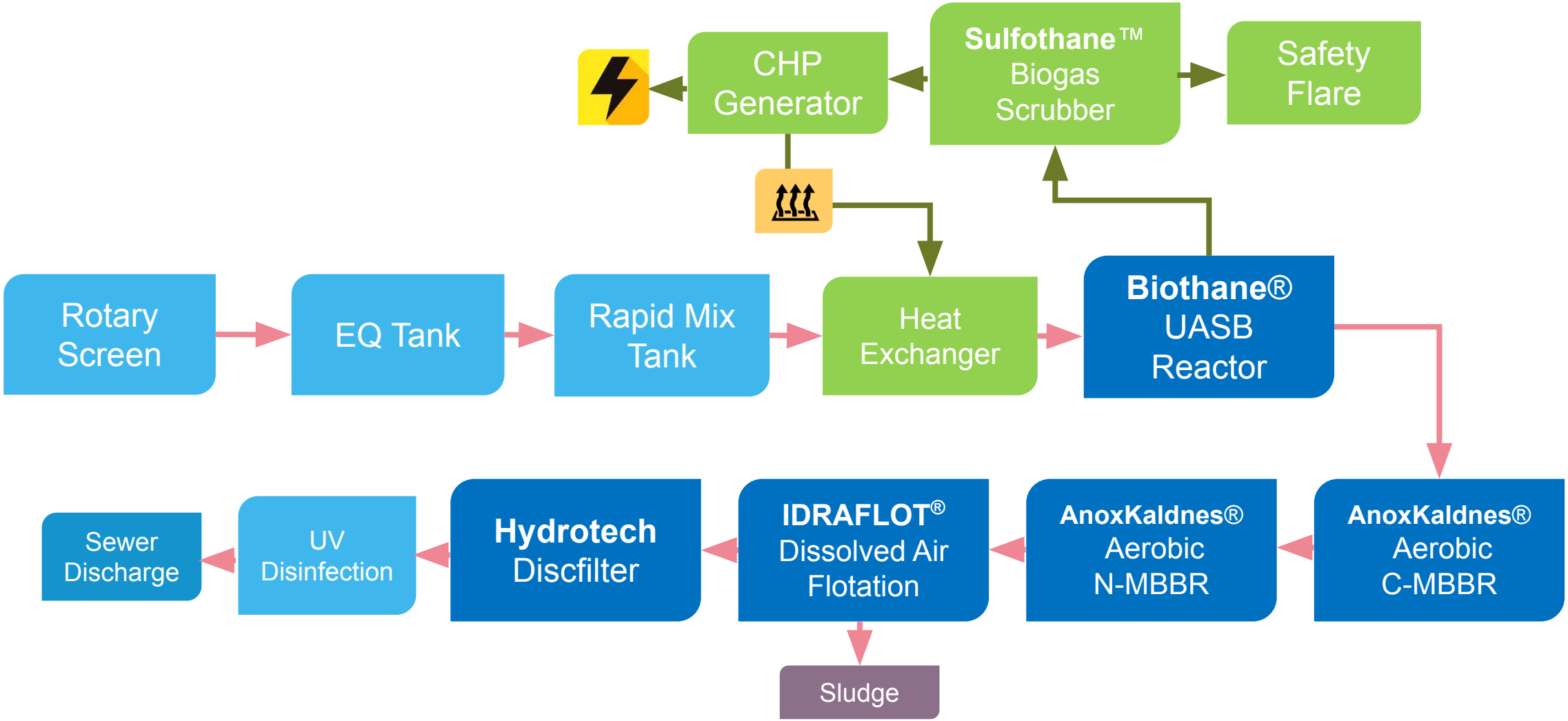
FOG: 25-75 mg/l

Temperature: 85-95° F

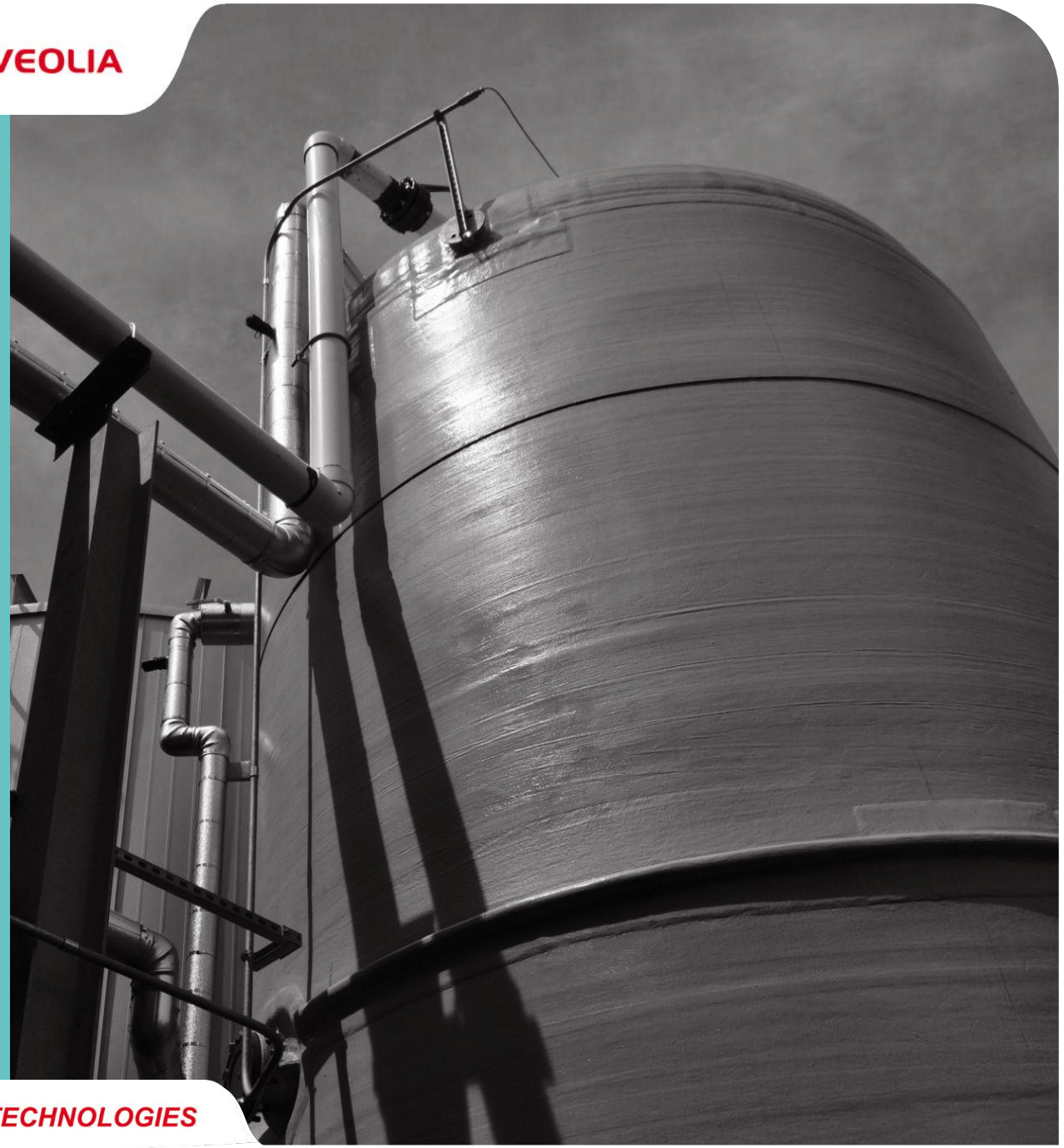
Effluent Parameters

BOD5:	<10 ppm
TSS:	<10 ppm
Ammonia:	<5 ppm
TP:	<2 ppm
pH:	6-9

Project Process Flow Diagram



Virtual Tour and Technology Review



WATER TECHNOLOGIES

Virtual Tour

Virtual Tour

Calamity Tank

Raw Influent Sump

Screened Influent Sump

Rotary Screen
(Located inside main building)

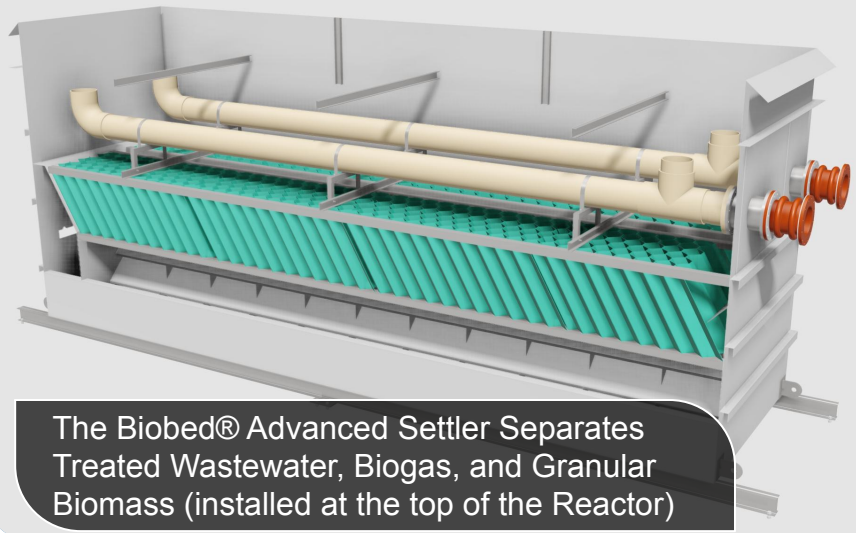
EQ Tank

Virtual Tour

Virtual Tour

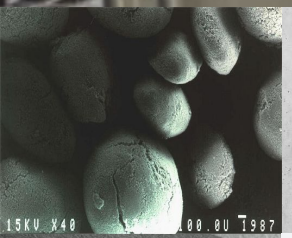
Biothane® UASB Anaerobic Reactor with Advanced Settler

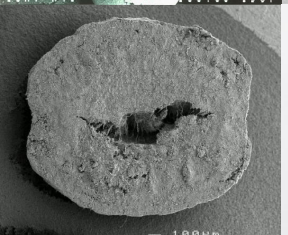
Feed Distribution Piping for the Biothane® UASB



The Biobed® Advanced Settler Separates Treated Wastewater, Biogas, and Granular Biomass (installed at the top of the Reactor)

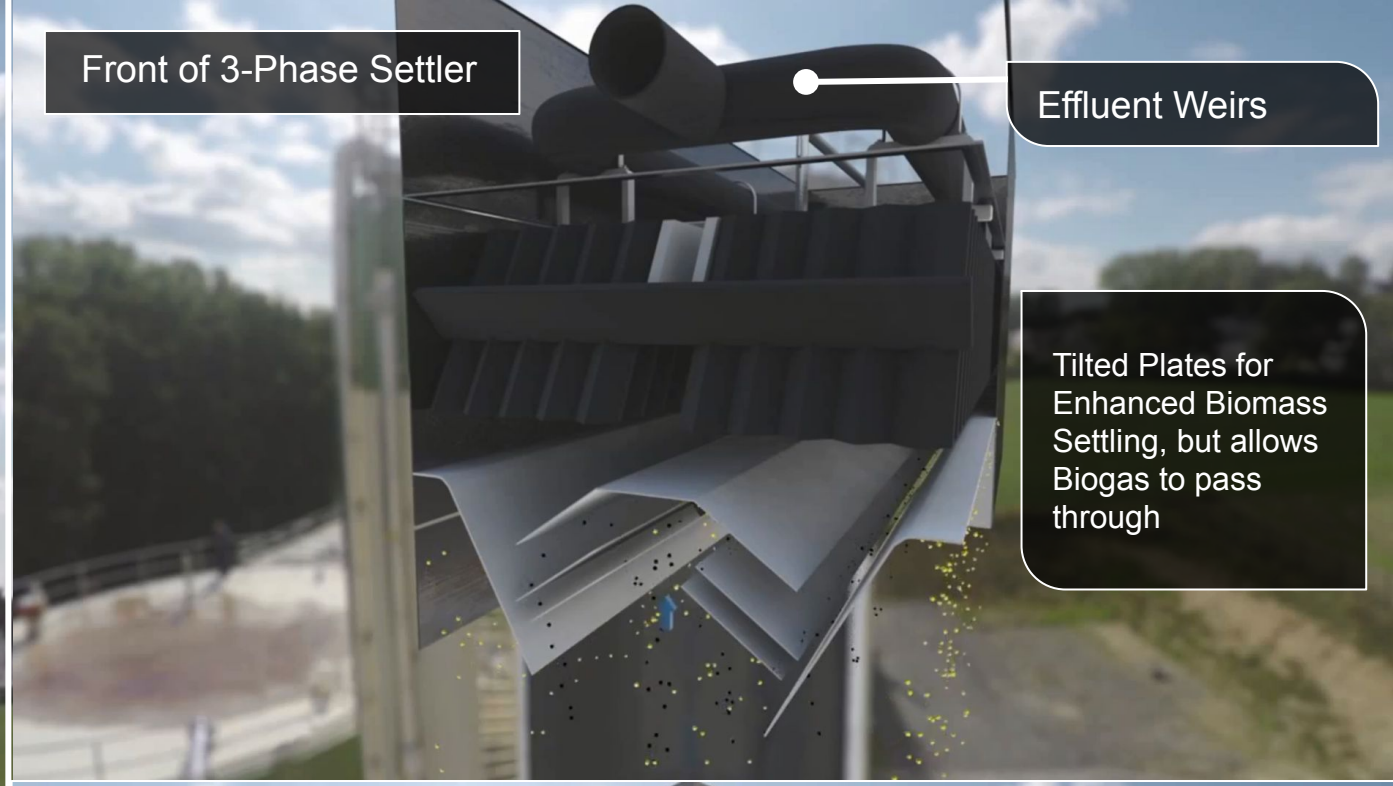
How the Biothane® High Rate Anaerobic Digestion System Works





Healthy Granular Biomass

Biomass has a Very fast settling velocity within the reactor



Virtual Tour

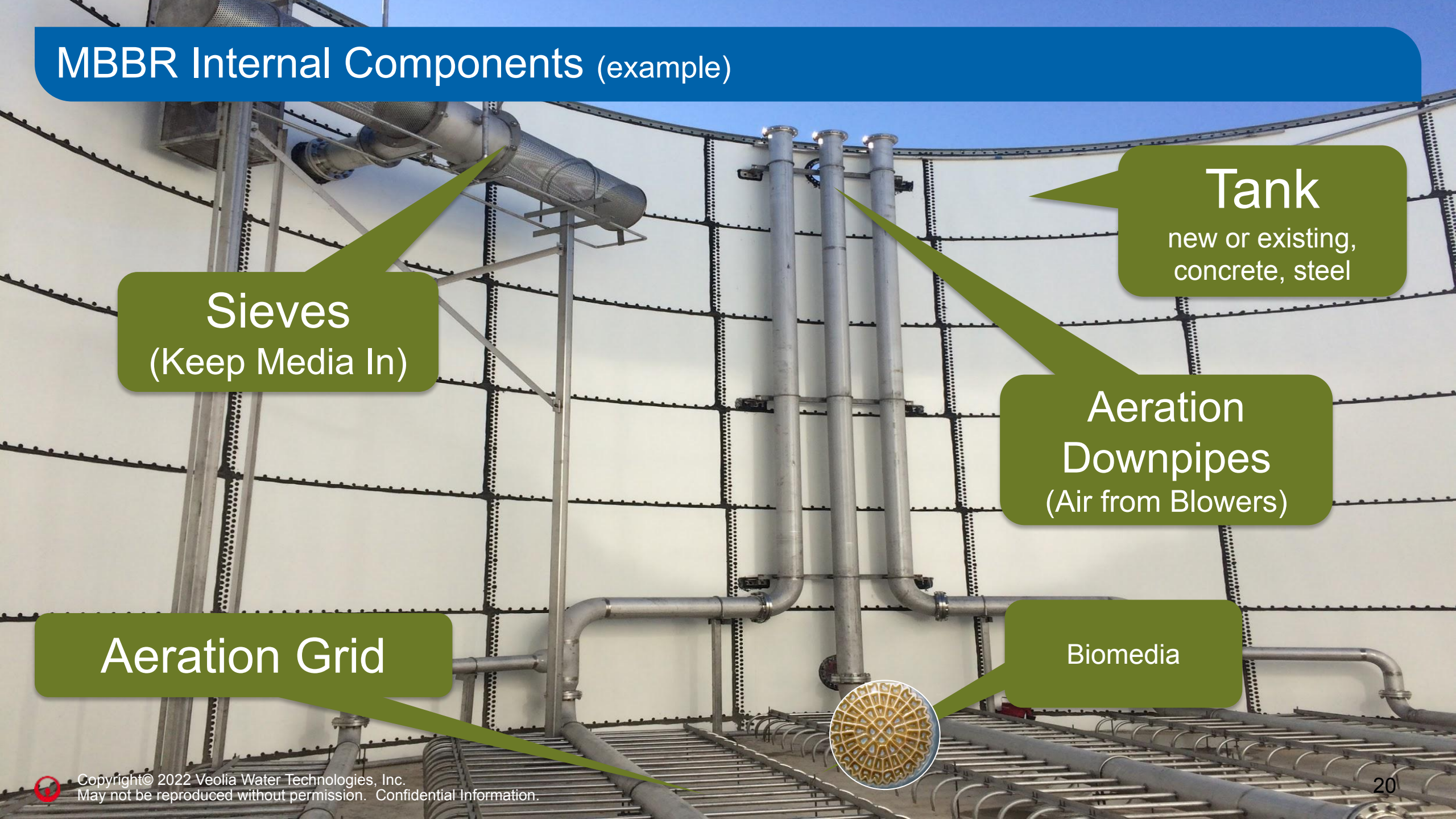
Virtual Tour

AnoxKaldnes® 2-Stage Moving Bed Biofilm Reactors

What's Inside the Reactors?

The aerobic reactors are filled with the Anox K5 Media. The media provides a protected surface for the biofilm to grow while maximizing surface area

MBBR Internal Components (example)



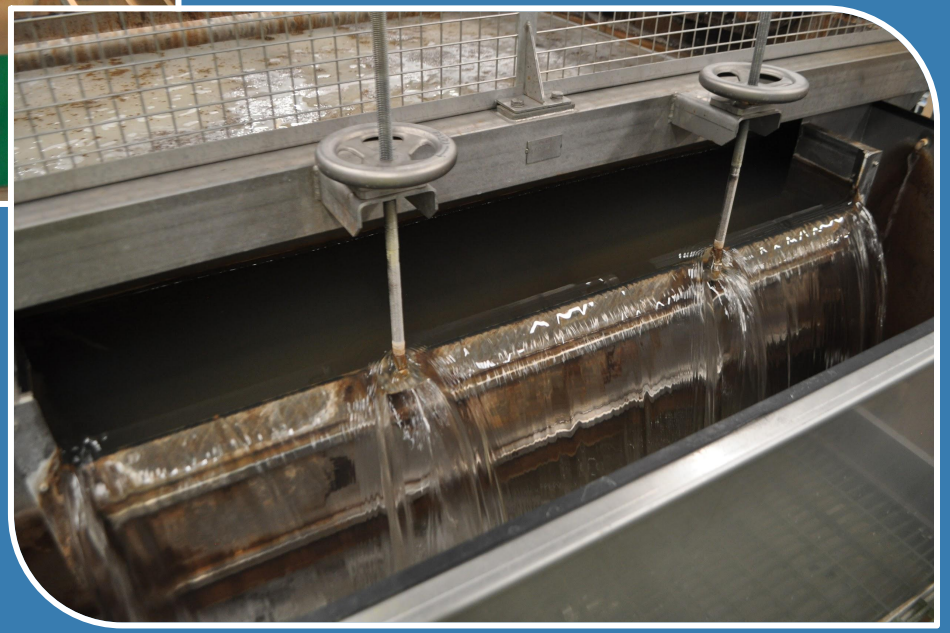
Virtual Tour

Virtual Tour

IDRAFLOT® DAF Unit
(Top View)

Top Photo
Side view of IDRAFLOT®

Bottom Photo
Treated Effluent from IDRAFLOT® DAF Unit



Virtual Tour

Virtual Tour

Top Photo

Hydrotech Discfilter side view

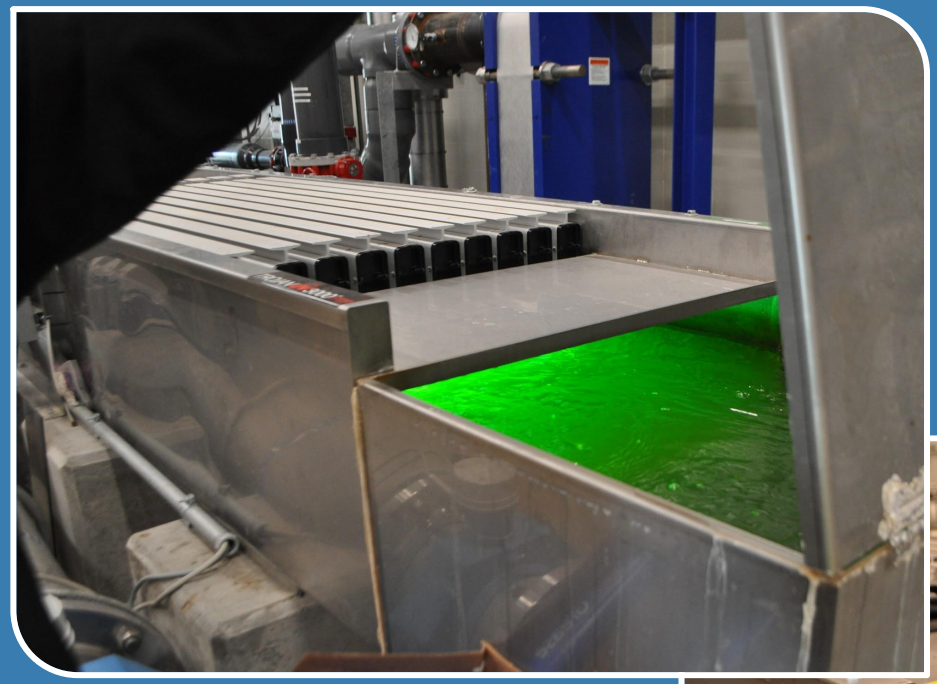
Bottom Photo

The inside-out filtration panels are assembled inside the Discfilter unit to provide TSS polishing

Virtual Tour

Virtual Tour

UV Disinfection is the final step to neutralize microorganisms prior to the effluent being discharged to the municipality.



Virtual Tour

Virtual Tour

Sulfothane® Biogas H_2S Removal System

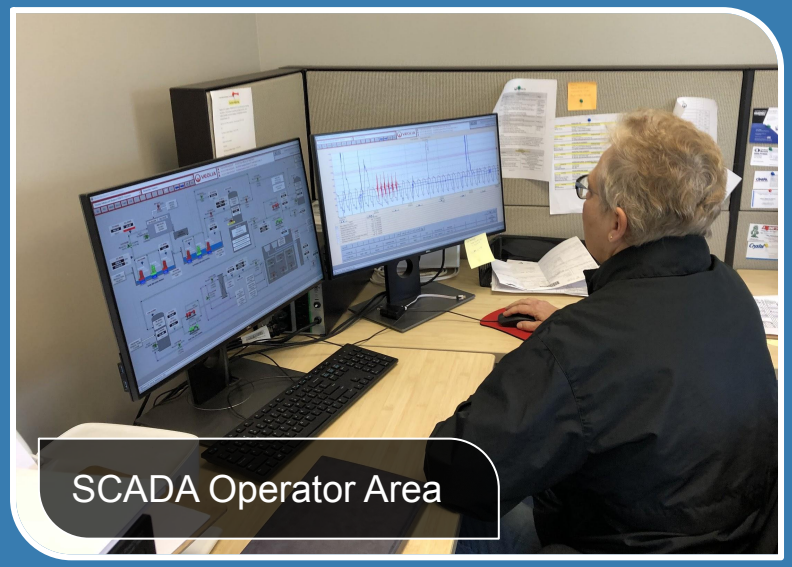
Combined Heat/Power Generator System Building

Inside the CHP Building

Enclosed Safety Flare

Biogas Storage System

Virtual Tour (Additional Photos)



SCADA Operator Area

Inline Analysis Equipment

WWTP from Street

View shows how tanks are minimally visible

Various Pumps

Odor Management System

Onsite Lab

Key Takeaways

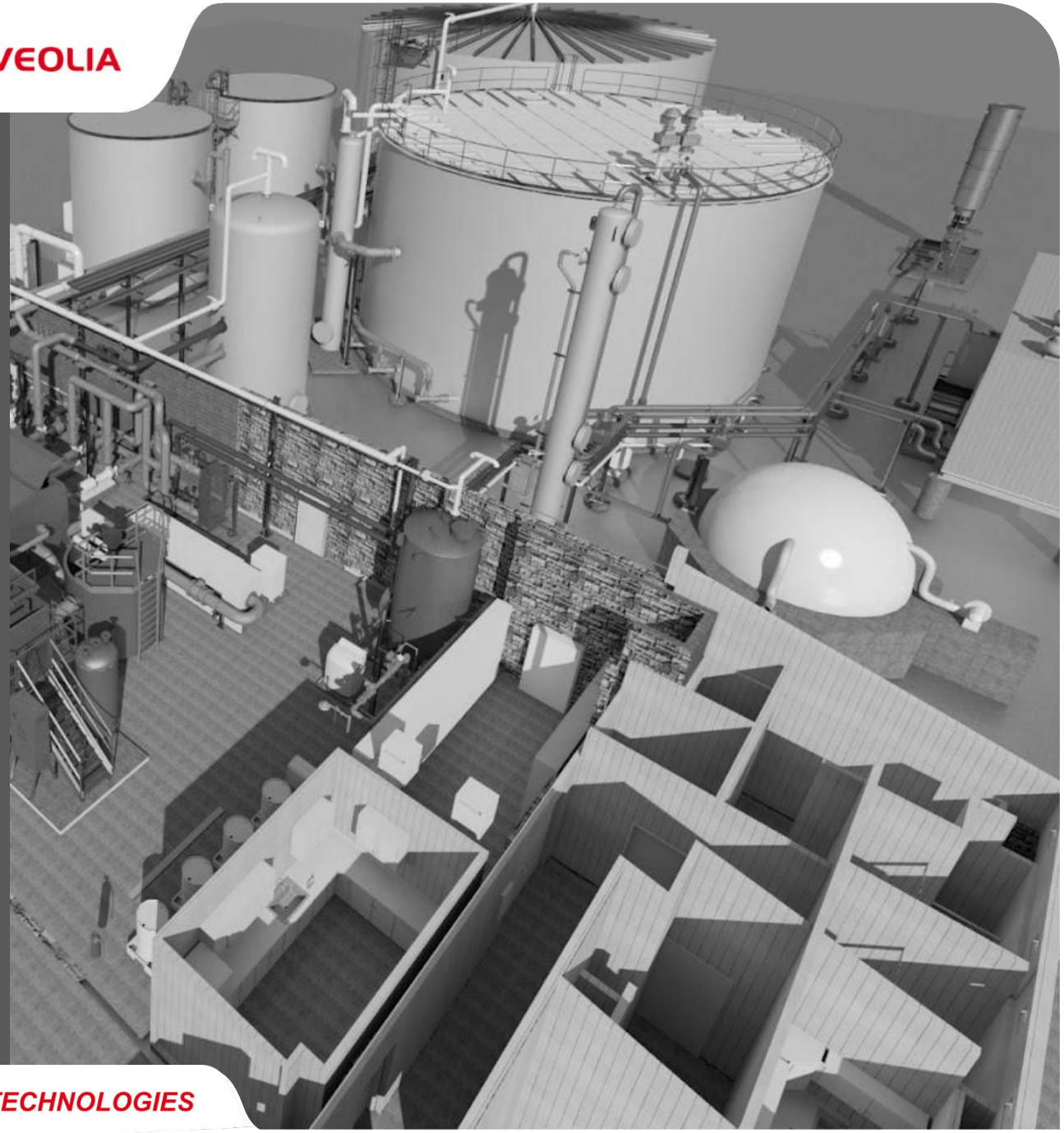
For Industrial Wastewater Projects

Identify Key Drivers
What are the costs and risks related to water / wastewater (OPEX, Regulatory, Flow limitations, etc.)

Collect "Good" Site WW Data

Engage potential technology partners early in the process

Tax and Energy Advantages
There is existing and pending government tax incentives that will significantly shorten the ROI for Anaerobic Digestion Projects



Questions & Answers?

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