WELCOME
TO THE 2020 BIOSOLIDS COMMITTEE TECHNICAL WORKSHOP

“ADDRESSING THE NEED FOR RENEWABLE RESOURCES – PAST AND FUTURE”
Event Agenda

7:30-8:15am – Registration and Breakfast

8:15am – Welcome: John Deogracias

8:30am – Biosolids technology overview: Andrea Odegard-Begay – Garver

9:00am – Decanter Centrifuges: Alexius Emejom – Flottweg Separation Technology

9:30am – Lifting the fog from FOG: Rashi Gupta – Carollo Engineers, Inc.

10:00am – Morning Break/Raffle

10:15am – PFAS in Biosolids: Mohammad Abu-Orf, PhD- Hazen

10:45am – Fate of estrogenic activity in land applied biosolids: Dr. I.L. Pepper- University of Arizona

11:15am – Sludge pumping: Aaron Renick - Seepex

11:45am – Lunch/Raffle

12:30pm – Keeping things Hot: Yasmine Boudhaouia – WesTech

1:00pm – Overview of Tres Rios WRF facility/Logistics of site tour: Houssam El Jerdi- Pima County

1:30pm – Travel to Tres Rios WRF

2:00pm – Tres Rios WRF site tour: Houssam El Jerdi and Pima County staff

3:30pm - Closing Remarks: John Deogracias
Thank You Sponsors!
This Archer Western/Walsh Group project includes modifications to anaerobic digesters including new digester feed, confined gas mixing, recirculation, discharge and emergency overflow systems.

SAN JOSE DIGESTER & THICKENER FACILITIES UPGRADES
San Jose, CA
Archer Western constructed a new liquid stream treatment process consisting of four new aeration basins and side stream treatment, blower building, electrical improvements, and modifications to the existing treatment complex including RAS/WAS pumps and several new piping systems.

SANTA RITA WATER RECLAMATION FACILITY IMPROVEMENTS
Durango, CO
Fountain Hills Sanitary District WWTP

Screw Press Dewatering and Disk Thickening
City of Chandler Ocotillo WRF

Aerated Sludge Storage, Pumping, and Dewatering Facility
Town of Marana WRF

Sludge holding and Screw Press Dewatering
Fats, Oils, and Grease (FOG) Receiving Stations

Dublin San Ramon Sanitary District, CA

Gresham Wastewater Treatment Plant, OR

Sacramento Regional Wastewater Treatment Plant, CA

Fresno-Clovis Regional WRF, CA
91st Avenue WWTP Digesters - Phoenix, AZ

Digester Dome Replacement and Rehabilitation
- Digested Gas Cogeneration System
- Digester Dome Rehabilitation
- Dewatering and Thickening Centrifuge
- Solids Handling Upgrade
Nogales International WWTP – Nogales, AZ

- WAS Thickening and Storage
- Digester
- Belt Press and Solids Handling Facilities
Tres Rios WRF Nutrient Recovery Project Design-Build
Pima County, AZ
Little Patuxent Water
Reclamation Plant Biosolids
Processing Facility
Improvements
Howard County, MD
Atlantic Treatment Plant
Thermal Hydrolysis Process
and Fats, Oils, and Grease
Receiving Station
Virginia Beach, VA
Thank You Sponsors!
SEEPEX Cake Pumps

El Paso, TX
SEEPEX Cake Pumps

Estes Park, CO
SEEPEX Cake Pumps

South Platte, CO
Cortland, NY

Equipment
(1) 36’ DuoSphere™ Dual Membrane Gasholder
(2) 36’ Stainless Steel Fixed Covers
(4) ExtremeDuty™ Sludge Mixers
(1) Tube-in-Tube Heat Exchanger

Cover Installation Timeline:
0 Weeks – PO received
2 Weeks – Release to Fab
5 Weeks – Submittal for Record
18 Weeks – Ready to Ship and Erection
19 Weeks – Testing
20 Weeks - Complete
Dallas, TX

(2) 93.5’ Fixed Covers
(3) 95’ Fixed Covers
(3) Tube-in-Tube Heat Exchangers
Nashville, TN

(1) 108’ Fixed Cover
(20) ExtremeDuty™ Sludge Mixers
Savage, MD

Equipment
(1) 80’ DuoSphere™ Dual Membrane Gasholder
(2) 80’ Steel Fixed Covers
(3) Tube-in-Tube Heat Exchanger
Mesa Greenfield WRF, AZ

Digesters and Storage Tank
Mesa Greenfield WRF, AZ
Solids Handling Building
Orange County Sanitation Districts, CA
Plant 2 Dewatering Building
City of Santa Rosa, CA

Biogas-Fueled Engine Generators
DC Water Biosolids Program, District of Columbia
Cambi THP Vessels and Digesters
Problem: The client had an Andritz machine (D3LL) for dewatering sludge prior to hauling that was about 10 years old. They were having numerous mechanical issues and it was not rated for the future anticipated flows at the plant. In August 2012, they experienced another mechanical failure and instead of repairing it, they chose to move up their schedule to replace it with a newer, larger machine.

Solution: The design requirements were 60-80 GPM of 2% digested sludge (1,250 lb/hr max). Besides needing a larger more dependable machine, they also needed something fast. The project was designed, advertised, bid (by general contractors) and awarded before the end of 2012. The contract was awarded to Flottweg, and we supplied our C4E model. They started up the new C4E in early February 2013.

Result: There were several features of the Flottweg machine that the customer really liked, and one in particular, our SIMP Drive®, proved to be invaluable very soon after start-up. The valve on the diverter gate was accidentally closed during operating and the machine plugged with sludge. They shut it down, removed the cover and cleaned the outside of the bowl. They then put the machine in manual mode and cleared the material inside the bowl without the need to disassemble the machine. This is one of the benefits of the SIMP Drive®, which is the ability to run the scroll independent of the bowl. Further, although they had plugged the machine and possible damaged the bearings, they did not appear to be compromised and the machine has been running since that incident with its original parts.
**Problem:** The cost of sludge handling has a direct impact on a wastewater treatment plant’s annual expenditures, and the Greenway Wastewater Treatment plant in London, Ontario, Canada is no exception. Before the sewage treatment plant installed Flottweg centrifuges they used belt presses in order to dewater the sludge. But the solids content was so low that the WWTP needed to use ancillary fuel in order to maintain the temperature in the fluidized bed incinerator.

**Solution:** In 2012, Greenway installed three Flottweg C7E centrifuge units. The process is operating 95% of the time, and two of the units will be running at all times. These three machines are individually designed to accommodate 317 gpm of liquid flow, or 3,748 lbs/hr of mass flow.

**Results:** With the Flottweg centrifuges, the wastewater treatment plant is able to increase the solids content up to about 26%. Additionally ancillary fuel is not needed anymore, which results in a savings of nearly 686,000USD per year.
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