

August 2021



BARSCREEN BEE

The Official Newsletter of the Northern Sacramento Valley Section
of the California Water Environment Association

<http://nsvs.cwea.org/>



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The Barscreen Bee is a
publication of the Northern
Sacramento Valley Section
of the California Water
Environment Association.

Welcome to Online Training Wednesday, August 11, 2021 9:00 a.m.—11:00 p.m.

9:00 a.m. Overview of Organics Recycling, Biosolids, & Bioenergy technology platform (including OREX, high-solids digestion Omnivore, Ammonia Recovery, and pyrolysis processes) and case studies in California, presented by Yaniv Scherson, PhD, PE (COO) and Andrew Dale, PE (Applications Engineering Director), Anaergia

10:00 a.m. Excessive Heat and Wildfire Smoke – Protecting Outdoor Workers, presented by: Jeff Shapiro, Health and Safety & Environment Manager, Northern California, Jacobs

For Credit hours, fill out this form:

https://docs.google.com/forms/d/e/1FAIpQLSdXxbLBmR29BA9BQADggcOa6jClgDjWqKM7wbLdBh57htQxA/viewform?usp=sf_link

Attendance will be verified during the class.

The training day will be held online, via MS Teams. The link to join the call, and phone call-in information is provided below:

Microsoft Teams meeting:

Join on your computer or mobile app

[Click here to join the meeting](#)

Join with a video conferencing device

493366865@t.plcm.vc

Video Conference ID: 119 071 673 9

[Alternate VTC instructions](#)

Or call in (audio only)

[+1 323-886-6924](tel:+13238866924), [631033764](tel:+1631033764)# United States, Los Angeles

Phone Conference ID: 631 033 764#

Questions? Contact Ted Couch, President (contact info on left side-bar)

Attendees of technical sessions will be issued Continuing Education contact hours toward CWEA Technical Certification and/or SWRCB education points toward wastewater certification.

To find out if a class qualifies for CWEA continuing education in your area of certification, go to the CWEA web site:

<http://www.cwea.org/pdf/tcp/TrainingRelevancyList.pdf>

All wastewater relevant sessions count as one education point per 50 minute presentation for the purpose of SWRCB operator certification.

NSVS Calendar of Events

- Online Training Wednesday August 11, 2021 9-11 am
- Board Meeting Tuesday Aug 24, 2021 10:30 am
- Training Wednesday Sept 22, 2021 9-11 am, location To Be Determined (T.B.D.)
- Board Meeting Tuesday Oct 12, 2021 10:30 am, location T.B.D.
- Board Meeting or Training Nov 17, 2021, location T.B.D.
- Board Meeting Tuesday Dec 14, 2021, location T.B.D.

Since March 13, 2020, Board Meetings have been held online. Prior to Coronavirus, most board meetings were held at 10 am at the Berry Patch Restaurant at 900 Newville Rd, Orland, CA 95963

Members are always welcome to attend the board meetings.
Contact twyhlidko@cityofredding.org or 530-224-4319,
or any of the NSVS Executive board members
For location or login information to board meetings.



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jim@g3engineering.com Cell 916-838-3913
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Pumps Ragging?

Problem Solved

Case Study: Half Moon Bay CA

Problem:

- Pumps clogging usually twice per week and took 1 hour to clean each pump.
- Risk to employees lifting pumps & exposed to waste, sharps etc.
- Excess energy consumption & high energy bills.

Solution:

- DeRagger+ and Keypad installed in control Panel.
- *Real Time Pump Protection* used to detect rags and run pump reversal via VFD.

Result:

- Energy Savings: 19% or \$500 per month in PG&E bills
- Near complete reduction in ragging.
- Big savings on manpower now effectively utilized rather than for cleaning pumps. Savings at \$735 per month.
- Reduced pump Run Time with clean pump

Total cost savings as projected by sewer authority: \$14,820 per year.

"We found that the energy usage has decreased to approximately 20% which shows a \$500 savings on our PG&E bill. This is besides the fact that we have been able to save manpower and utilize them for other activities instead of the constant cleaning."

- Kishen Prathivadi, P.E, PMP, Sewer Authority Mid-Coastside

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Ms. Marcia Sherony from Hydro International gave a presentation regarding the problems and effects of grit in the wastewater treatment process. Her presentation showcased the latest design criteria for effective grit removal process. She stated that analyzing the settling velocity of different types of silica sand and wastewater grit can help improve the design to create a much more efficient grit removal system. She broke down some of the most common designs of grit removal systems and explained the results of testing of Detritus tanks, aerated grit basin systems and vortex technologies. (head cell, stacked tray, and mechanically induced vortex).

Next she explained how to make improvements throughout the process including all four sections, collection, pumping, concentrating and dewatering. By using her calculations, a utility could improve its overall grit capture from 28.1% to 85.7% by making major changes to grit collection and smaller changes to the concentrate/wash process and dewatering process. These changes translate into

major savings in O&M and equipment wear and tear.



Grit Removal System Capture Efficiency



Collection

50%



Pump

N/A



Concentrate

75%



Dewater

75%

Overall Grit Capture
 $50\% \times 75\% \times 75\% = 28.1\%$

Relative Performance of Grit Removal Devices

Hydro International 

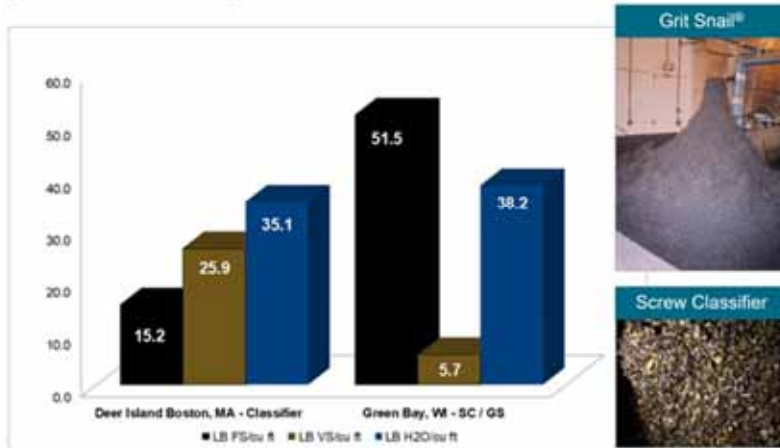
*Source: McNamara, 2009 WEF

Technology	% of Design Flow When Tested	Design Removal Efficiency at 100% of Flow	Observed Total % Removal 150 µm and up	Observed Total % Removal 106 µm and up
Detritus Tank	66	150 µm and larger, 2.65 SG	66 to 71	57 to 68
AGB	66 to 100	Unknown	35 to 70	32 to 67
Mechanically Induced Vortex	27 to 90	95% removal of 270 µm, 2.65 SG 65% removal of 150 µm, 2.65 SG	43 to 52	43 to 50
Stacked Tray	100	95% removal of 75 µm, 2.65 SG	91 to 92.5	89 to 90
Structured Flow Vortex	66 to 100	95% removal of 75µm, 2.65 SG	90 to 95	87 to 93

Performance Comparison

Hydro International 

SlurryCup™ and Grit Snail® Significantly Outperforms Conventional Cyclone / Screw Systems



Grit Removal System Capture Efficiency

Hydro International 



Collection

95%



Pump

N/A



Concentrate/Wash

95%



Dewater

95%

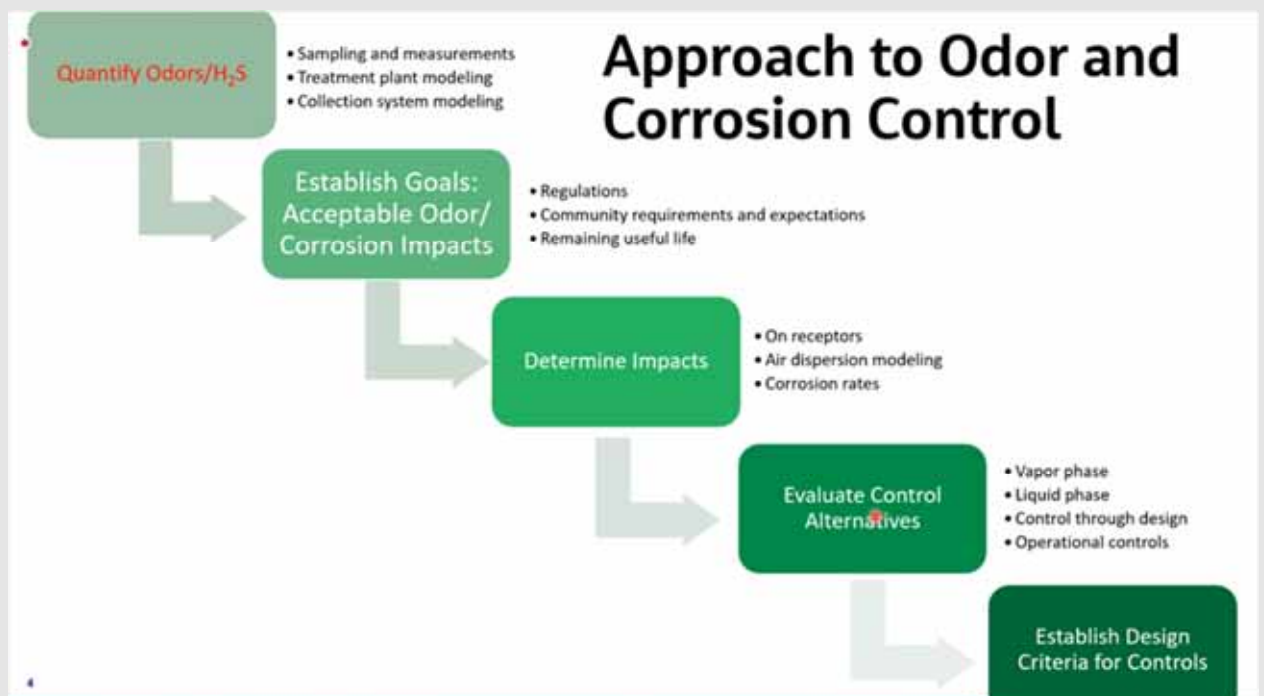
Overall Grit Capture
 $95\% \times 95\% \times 95\% = 85.7\%$

Expanding the toolkit to support mitigation of odor and corrosion in collection systems: the use of sewer process models

Adrian Romero, PhD
Wastewater Solutions Engineer
adrian.romero@jacobs.com

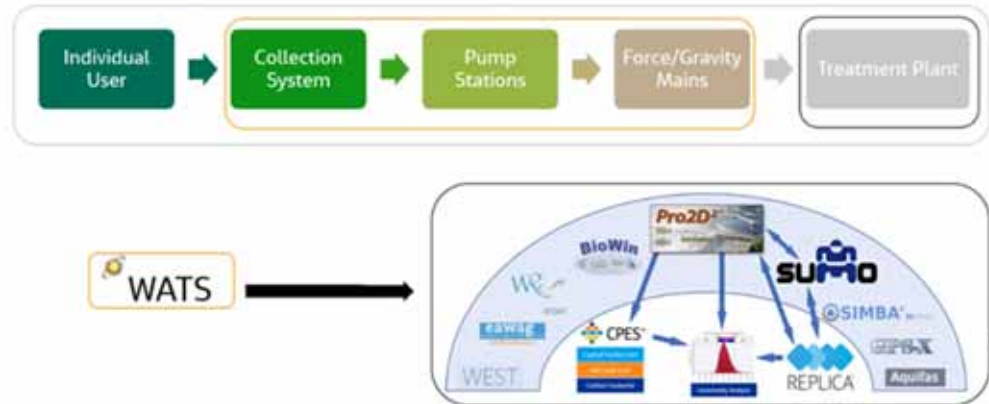
Mr. Adrian Romero with Jacobs gave a presentation regarding how to mitigate odors and corrosion within collection systems by using sewer process modelling. Analyzing the physical, chemical and biological process that occurs within the collection system explains the actual development of sulfides and sulfates that cause the problems. Understanding the process helps to assist a good operator in developing solutions to odor and corrosion problems, as well as identifying if there are multiple issues occurring simultaneously.

Modeling is used to evaluate solutions such as optimizing/reducing dosing of chemicals such as hydrogen peroxide and ferric to combat these problems and figure out the most effective treatment to ensure the best results.



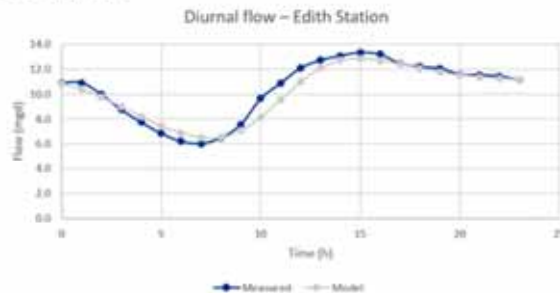
Key Developments in Sewer Process Models

- Integrated modeling
 - Sewer-to-Plant Modeling: It's all a single system



City of Albuquerque – Model Calibration

- 17 monitoring stations
 - Vapor phase H₂S and dissolved sulfide
 - pH and temperature
- Chemical dosing
- Special sampling
 - Flow monitoring, diurnal pH, COD



Sewer Treatment Optimization Results

Chemical	Current		Optimized	
	gal/day	\$/year	gal/day	\$/year
FeCl ₂	2,300	\$1,118,000	1800	\$915,000
Mg(OH) ₂	930	\$1,034,000	700	\$774,000
NO ₃ ⁻	276	\$284,000	0	\$ -
H ₂ O ₂	86	\$156,000	120	\$217,000
Ca(OH) ₂	0	\$ -	266	\$276,000
Plant Influent H2O2	500	\$900,000	0	\$ -
Total		\$3,500,000		\$2,200,000

+30 miles of pipes treated
\$1.3 million chemical savings



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JOB POSTINGS:

City of Redding Website: <https://www.governmentjobs.com/careers/reddingca>

Wastewater Plant Operator - Grade III/IV/V, City of Redding, Redding, CA, USA
Grade III, \$27.29-\$34.83/hr; Grade IV, \$27.97-\$35.70/hr; Grade V, \$28.67-\$36.59/hr

Hazardous Waste Specialist I, Salary \$54,974.40 - \$70,158.40 Annually

Public Works Maintenance Worker, Salary Regular Full-Time Positions \$22.31 - \$23.43 per hour, Full-Time /Part-Time Temporary Positions \$13.37 - \$17.18 per hour

CaWaterJobs.org Website: <http://www.cawaterjobs.org/>

Burney Water District, District Manager Posted June 25, 2021

If you are reading this job announcement, you may be in a similar place in life I was twelve years ago. Living in the city, wondering if there is a better place for you and your family to grow, learn, play, and to make a difference in your community. Hoping to find a place where the cost of living is a little more affordable also.

Of course, you have been preparing for this opportunity – you have earned your certifications as a Grade 3 Wastewater operator and a D2/T2 Drinking Water Operator, probably have a college degree in a technical field on your wall, and you have been taking on managerial, engineering and administrative tasks well above your pay grade. You have been a member of a number of vocational organizations, and jump at the opportunity to better your skills and knowledge.

You also enjoy the real outdoors. A place that actually has four-seasons. A warm breeze rustling through the pines. Cold, crisp mountain mornings. Rivers, lakes, streams, grassy fields, gentle slopes and rugged mountains. Thunderstorms, lightning, rain and snow. Trout, deer, Bald Eagles, squirrels, and woodpeckers who are oblivious to the hazards present on power poles...

Well, this may just be the opportunity you have been looking for. But in order to take your place in this organization, you will need to BE a lot of other things as well: An approachable people-person. A good listener and communicator. Sympathetic and compassionate. Flexible. A selfless volunteer of your time for the betterment of the community. Humble. Fair. Honest. These need to be a part of the fabric of who you are, and if they are not, then this is NOT the right opportunity for you.

If you see yourself in this mirror of words, please review the District Manager job description at www.burneywater.org, then follow the instructions for submitting your application. I look forward to learning more about you in the weeks to come.

Kind Regards, Willie Rodriguez –
District Manager, Burney Water
District

The logo for Aquadyne Associates features the word "AQUADYNE" in a large, bold, blue, sans-serif font. Below it, the word "ASSOCIATES" is written in a smaller, blue, sans-serif font.

Alex Ambrosi

(P) 415-460-6393 (F) 415-460-6395
alex@aquadyneassociates.com
www.aquadyneassociates.com

710 C Street, Suite 200
San Rafael, CA 94901

JOB POSTINGS on County websites:

City of Dunsmuir website: City of Dunsmuir Lead Wastewater Treatment Plant Operator, no salary or deadline information listed. Contact the City of Dunsmuir personnel department. <http://www.ci.dunsmuir.ca.us/employment>

City of Chico Website: <https://www.governmentjobs.com/careers/chico>

City of Chico: Up to \$10,000 SIGNING BONUS available for Wastewater Operator III and Equipment Mechanic II positions!

Equipment Mechanic II, Salary , \$42,120.00 - \$58,073.60 Annually SIGNING BONUS!!! - Up to \$10,000 bonus for new Equipment Mechanic II employees. This recruitment is to fill one vacancy and establish an eligibility list which may be used for future vacancies. The ideal candidate will have an associates degree in automotive or diesel technology programs from an accredited college and at least four years of journey-level mechanic experience. This position will require a thorough working knowledge of heavy duty truck repair with experience troubleshooting diesel engines, electrical systems, fuel systems, and hydraulic systems. The ideal candidate is an effective communicator and customer service-oriented individual who is excited to support a well maintained and highly diverse municipal fleet.

City of Chico, Wastewater Treatment Plant Operator II or III (Signing Bonus!)
Salary. \$45,968.00 - \$80,745.60 Annually, Signing Bonus and pay increase for Wastewater Operator III position!

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\$75 per year for a business-card size advertisement,

\$150 per year for a half page advertisement (8.5 x 5.5 inches), or

\$300 per year for a full page advertisement (8.5 by 11 inches).

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Submit application and payment to the NSVS Secretary/Treasurer:

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