Victor Valley Wastewater Reclamation Authority

Purple Pipe

Volume XIII Spring 2018

Apple Valley Subregional begins start up

After 20 years of planning and two years of construction, the Apple Valley Subregional Water Recycling Plant (WRP) has been started. Large trucks delivered activated sludge from VVWRA's main plant to "seed" the Apple Valley plant adjacent to Brewster Park on February 13, 2018. The water recycling at the Apple Valley facility is a biological process that requires microbes to help clean the wastewater. The microbes actually eat the organic matter. The facility also features FibrePlate hybrid membrane technology, which is considered a state of the art filtering system. The startup process is expected to take several weeks before any recycled water leaves the plant. When fully functional, the Apple Valley facility will be capable of producing up to one million gallons of recycled water per day. The recycled water will be able to be delivered via pipeline to the Apple Valley Golf Course, the Civic Center and area parks for irrigation.

The Apple Valley WRP is designed to be a good neighbor facility. Much of the plant is actually below ground to deaden the sound of pumps and blowers. The aeration basins are enclosed and advanced odor control technology will virtually eliminate unwanted odors. The visible portion of the plant is no taller than a two story home and the surrounding grounds are tastefully landscaped to blend in with the rest of the area.

Front gate at Apple Valley Subregional

A second, nearly identical facility has been built in Hesperia. The City of Hesperia is currently installing a 10 mile pipeline that will deliver the recycled water from that plant to the Hesperia Golf Course. There are several reasons for construction of the Hesperia and Apple Valley WRP's. With continued growth in the Victor Valley, the main interceptors or pipelines from the community to the plant could reach capacity and would have to be replaced. The VVWRA Board of Commissioners felt that construction of the regional water recycling facilities would be less expensive while also providing the communities of Hesperia and Apple Valley with a reliable source of recycled water. Another benefit from the WRP's is water conservation and reuse. Use of recycled water for irrigation is a responsible use of our natural resources and will drastically reduce the demand on our local drinking water supplies. The same water that comes from your faucet is currently used to irrigate many community sites. Recycled water provides a reliable and safe way to keep our parks and other areas green while saving our most precious resource for use in our homes and businesses.

INSIDE THE
PURPLE PIPE

Breaking news: VVWRA's Mauricio Marin has been named the CWEA E & I Person of the Year! Details on pg. 3

A Message from our General Manager

The search for civility and reason in our society.

Entropy is defined as *"a lack of order or predictability; a gradual decline to disorder"*. I see this struggle occur around us incessantly. Everything from litter, to open discord in the media. A loud voice is not always a wise voice, and derogatory opinion is not always wisdom. So much of it appears to be petty which makes me wonder; why do people seem to enjoy conflict so much? How does conflict make our lives and those of our families and friends more meaningful? Yet so often we seem to find these voices and opinions getting media attention. When did being rude overcome civility? I think **entropy** is winning. Perhaps, because we have more distractions now than in the past to occupy our time, to fight for our attention. I long for the good old days, when there were those willing to consider all sides of an issue and seek compromise rather than a narrow self-interest. I know others share my hope for mutual cooperation and an end to entropy. If we can come together, we'll find that our mutual interests outweigh our, often times, petty differences. Let's find a way to work together towards solutions rather than continuing the bickering that threatens to tear us apart. We owe it to ourselves, our community and our country.

Dingle Dollar$

VVWRA GM Logan Olds hands out the popular Dingle Dollars during his talk at the Apple Valley Chamber of Commerce luncheon in January.

Careers in Wastewater

VVWRA General Manager Logan Olds was among the featured speakers at the 2018 Innovators High Desert Water Summit put on by the Mojave Water Agency. The Summit brought together experts in water use and reuse for a discussion with area high school students interested in environmental issues. Logan talked about the importance of recycling wastewater as a way of preserving a precious resource. He also spoke about career opportunities in the wastewater field. He pointed out that there are more than 1000 public agencies responsible for wastewater treatment in California and some 6500 licensed treatment plant operators. There are many more privately run treatment plants. However, with an aging workforce, many of the people currently working in the wastewater industry will be retiring in the next 5 to 10 years. Olds said that means now is a perfect opportunity for young people to prepare for a wastewater career. A video of the presentaion can be seen at the Johnny Wastewater YouTube page or at VVWRA.com/videos.

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newsletter

VVWRA Board of Commissioners

- Russ Blewett / Hesperia
- Jim Kennedy / Victorville
- Scott Nassif / Apple Valley
- Jeff Rigney / SB CSA 42 & 46

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Around the Plant

Mauricio Marin named CWEA's E & I Person of the Year

Congratulations to Mauricio Marin for being selected the CWEA Electrical Instrumention Person of the Year.

VVWRA's Mauricio Marin has been named Electrical Instrumentation Person of the Year by the California Water Environment Association. The statewide honor recognizes excellence in the field and Mauricio's significant contributions to VVWRA. Mauricio has the task of installing and repairing the electrical and electronic infrastructure at our plants. "I'm appreciative of the opportunities and challenges that I'm presented with," said Mauricio. In the 10 years Mauricio has been with VVWRA, he has been a crucial part in the successful implementation of a number of large and complicated projects "Mauricio's talents extend to the breadth of a projects scope as well as to ensuring the individual details are not forgotten," said VVWRA General Manager Logan Olds "His standard of care is exceptional and our team at VVWRA is stronger as a result." Mauricio will be formally presented with his award on April 20th in Sacramento.

Mauricio leading a staff briefing before the start of electrical work.

Promotions and Certs

Congratulations to Brad Adams who was promoted from Sr. Operator to Lead Operator.

Congratulations to Latif Laari for earning his Grade 4 Environmental Compliance certification from CWEA.

Congratulations to Robert Townsend for earning his Water Treatment Operator Grade T2 and Water Distribution Operator Grade D2.

Congrats to Mike Koncur for earning his Grade II Mechanics certification from CWEA

CWEA/DAMS Event Calendar

- **Late April**-Member Appreciation, TBD
- **June 20**-Installation luncheon,El Pescador, Victorville
- **August 23**-Air Pack Derby, Big Bear
- **Oct. 19**-TCP Study Session,SB Valley College
- **Nov. 7**-Collections Workshop, Hesperia
- **Dec. 7**-Holiday/Awards Dinner, TBD

All event times and dates are subject to change.
DAMSofCWEA.org

Welcome!

VVWRA welcomes Andrew Henriquez (l) as a new Sr. Operator and Travis Prine (r) as a new Operator.

VVWRA Receives SCE check for Energy Efficient Design

Savings by Design program recognizes energy savings incorporated in Subregionals

(l-r. VVWRA's Latif Laari, Robert Townsend and GM Logan Olds, VVWRA Commissioners Jeff Rigney, Jim Kennedy and Larry Bird, SCE's Amy Olson and Craig Henderson, VVWRA's Chieko Keagy, Alton Anderson, Xiwei Wang and Robert Coromina)

VVWRA was recently presented with a check for $92,676 from Southern California Edison for incorporating energy efficiency into the design of the Subregional Water Recycling facilities in Apple Valley and Hesperia. The check was presented to the VVWRA Board of Commissioners at their regular meeting on January 18th, 2018 as part of SCE's Savings by Design Program. The Savings by Design program provides incentives to SCE customers who engage early in the design process and incorporate energy efficiency recommendations into their projects.

Savings By Design

VVWRA began working with SCE on energy efficient designs in 2010 which have equated into annual energy savings of approximately $430,000. The energy efficient designs at the Apple Valley and Hesperia Subregionals included high efficiency blowers, pumps, variable frequency drives (VFD) and dissolved oxygen (DO) controls to maximize energy savings. The Apple Valley plant saved 460,667 kwh and 60 KW for an incentive of $41,049, while the Hesperia plant saved 531,961 kwh and 47 KW for an incentive of $51,627. "Since 2010, VVWRA has led the wastewater industry in energy efficiency and optimized nearly every piece of equipment at the main plant in Victorville, which maximizes savings and the Subregional plants were no different.", said SCE's Amy Olson.

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"Our partnership with Southern California Edison has proven to be a win-win for both sides by providing positive ways to improve energy efficiency at our new facilities while saving money for our ratepayers", said VVWRA General Manager Logan Olds.

Construction and testing on the Apple Valley and Hesperia Subregional Water Recycling plants is nearly complete. When fully operational, the plants will be capable of producing up to one million gallons per day of recycled water that can be used for above ground irrigation at parks and golf courses. The water recycling at the two plants will also create more capacity in the VVWRA interceptor system which will delay the need for costly upgrades.

****Fun Fact**: *By using biogas (methane) produced in our digesters to power our generators, VVWRA saves an average of $40,000 per month in natural gas expenses.*

Energy Storage

VVWRA Breaks Ground on Micro-Grid & Battery Storage System

VVWRA has broken ground on an exciting new microgrid and battery storage system that promises to provide cleaner, more reliable electricity to the main plant. The Primus Power flow cell batteries are being installed at a previously vacant area of the plant near our 2G 800 kwh generators. The battery storage system includes 8 flow cell batteries that use liquids pumped from one chamber to another to generate and store electricity. The system will work in tandem with our on-site 2G generators to enhance power control and improve reliability of our electrical supply. The battery system will have a storage capacity of up to 200 kWh. The batteries will be capable of bridging power outages and low voltage events that can disrupt our operations and damage our equipment. The flow cell type of batteries have several advantages over lithium batteries including an extended life of at least 20 years without a reduction in capacity and a reduced fire hazard. The project is being paid for with a $1.7 million grant from the California Energy Commission. The project is scheduled to be completed by Summer of 2018.

VVWRA is installing eight Primus Power flow cell batteries similar to these. The batteries will store power that can be used during power outages and maintenance.

Another look at the Primus Power zinc bromide flow cell battery with titanium electrodes.

A new concrete slab has been poured at the site where the batteries will be installed. The site will include outdoor lighting and the microgrid will be located inside the existing building.

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Electronic Logbooks

eLogger Improves Efficiency

VVWRA serves a 279 square mile area that includes Apple Valley, Hesperia, Victorville, Spring Valley Lake and Oro Grande. The plant and employees treat about 10.7 million gallons of wastewater every single day. To the average homeowner, it may come as some surprise to hear that wastewater is much more than what comes from your toilet. It includes water from sinks, showers, dishwashers and washing machines - anything that goes down the sewer pipe. VVWRA takes that wastewater and sludge, and transforms it. The wastewater that comes to the VVWRA plant goes through an extensive cleaning and disinfection process before being returned to the Mojave River. Solids are put in large anaerobic digesters, where the resulting methane gas is used to help the plant. VVWRA is currently able to produce about 90% of its own energy needs with plans to become 100% energy neutral.

Aerial view of VVWRA.

Efficiency - in all operations - is critical to VVWRA.
To this end, in August of 2015 VVWRA set out to determine the best and most efficient way to capture and preserve institutional knowledge, for immediate use and operational improvement, and as a resource for future operations. They sought a system that would be useful and accessible to every staff member. Through their research, the idea to move from paper logs to electronic logs was born. After much discovery, due diligence, and testing, VVWRA selected eLogger as its vendor partner to provide electronic logbook software and support to VVWRA. eLogger went live in June of 2017 at VVWRA and metrics were put in place to mark and measure achievements. Six months after startup, eLogger had been implemented at the regional plant, Apple Valley Subregional, Hesperia Subregional, all interceptors and collection systems structures, industrial dischargers, pump stations, and FOG/Septic receiving.

To put that into numbers, in just six months:

- *62 different categories of logs are being tracked*
- *VVWRA is fast approaching 10,000 entries in their new logbook software*
- *They have 28 active users that utilize the information that is entered into the system to make operational and regulatory decisions*
- *VVWRA Administrators created 91 different templates to track specific information*
- *VVWRA Administrators created 59 saved searches and reports so their users could quickly and efficiently capture information*

At VVWRA, binders and spreadsheets in the control room are disappearing one at a time, and green ledger logbooks are a thing of the past. eLogger is now being used daily by operations, maintenance, E&I, MIS, and pretreatment staff across all locations, which means that as an overall operation, VVWRA has unprecedented access to operational information. That information is better organized than ever before, and can be found faster and easier than ever before. AQMD and Stormwater regulatory compliance reports are better, faster, and more accurate. Operational meetings are more focused, due to better understanding of current issues and incidents, and a clear outline of current and completed tasks. The new employee learning curve has improved. Testing is rapidly being completed and the LOTO(Lock out/Tag out) process will be converted to eLogger.VVWRA has come to recognize that capturing and preserving staff knowledge about plant processes, systems, and procedures is critical to their long-term operational success. This cannot be overstated: VVWRA is better informed and more knowledgeable about their operations as a result of using eLogger. The future is bright for VVWRA. Thanks to the dedicated efforts of VVWRA staff, their expectations are that in 2018 eLogger will continue to become a more integral and rich knowledge center, improving the daily operations, communications, and efficiency of VVWRA.

Old paper log.

**This article is re-printed from eLogger.com, Client Success Stories Jan. 24, 2018*

Benefits of Recycled Water

- ***relieves pressure on drinking water supplies***
- ***use in irrigation keeps golf courses, parks and other landscaped areas green***
- ***replenishes underground aquifers***
- ***good stewardship of our natural resources***
- ***the Hesperia & Apple Valley water recycling facilities will reduce flow to main plant delaying the need for costly upgrades.***

VVC Foundation Hall of Fame

The Dingleberrys win Lip Sync Battle

Competition helps raise thousands of dollars for Victor Valley College

The Dingleberrys performing in their sequined safety vests at the VVC Foundations Hall of Fame Awards. The Dingleberrys are, from left to right, Daniel Enriquez, Robert Coromina, David Wylie, Kristi Casteel, Logan Olds and Mr. Dingle. Special thanks to The Dingleberrys choreographer Britney Veal.

They were billed as America's favorite wastewater lip sync group...The Dingleberrys, representing VVWRA, won the Lip Sync Battle at the Victor Valley College Hall of Fame Awards on February 24th. The Dingleberrys performed a medley of songs that included "Play That Funky Music", "Bohemian Rhapsody" by Queen, "Let It Go" from Frozen and AC/DC's "Dirty Deeds Done Dirt Cheap". The Dingleberrys managed to raise $3821 for VVC's Construction Technology and Public Works Department, which provides internship opportunities at VVWRA. 14 of VVWRA's current employees have gone through the internship program before starting their career in the wastewater field. Check out the video of The Dingleberrys performance at VVWRA.com/videos.

The Dingleberrys proudly pose with their first place trophy

Backstage before the big performance.

***Fun fact: Before settling on the name The Dingleberrys, VVWRA considered other names like The Charmins, The Cling-ons, The Turd Herders, The Floaters and Sinkers, Dingle and the Hangers-on, One Flush Away, and The Skid Marks. In the end, The Dingleberrys was the winner.*

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The back side

Ask Johnny!

Hi Johnny,
I've recently seen crews installing a purple pipeline in Hesperia. Is that your project? Where is the pipeline going?

Jackie, Hesperia

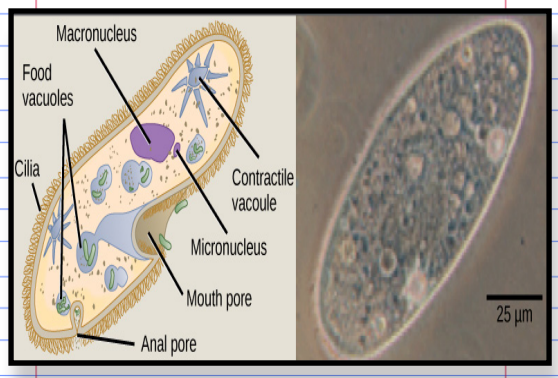
Hi Jackie,
The purple pipeline installation is not our project, but it is related to the Hesperia Subregional. The pipeline is part of the City of Hesperia's project to deliver recycled water from our newly completed facility west of Maple Ave to the Hesperia Golf Course. The water will fill the ponds at the golf course and be used to water the grass. The pipeline will be roughly 10 miles long and include tie ins so recycled water can be used to irrigate the civic center and city parks. The recycled water will not be used at any homes and is not designed to be used for drinking water. However, it will save drinking water that is currently being used to irrigate the golf course and parks. When fully functional, the Hesperia subregional will be capable of producing up to one million gallons of recycled water per day.

Hi Johnny,
I missed The Dingleberrys performance at the VVC event, but saw the YouTube video and thought it was hilarious! Will The Dingleberrys be performing again any time soon?

Rudy, Victorville

Hi Rudy,
Originally, The Dingleberrys planned to do just one show, but since the VVC Hall of Fame Awards, they have been asked to perform at other events. The Dingleberrys are flattered by the offers and are taking them under consideration. Only time will tell if there will be a reunion. In the meantime, keep watching the video of the performance at VVWRA.com/videos. or on the Johnny Wastewater You Tube channel.

Know Your 'crobe



Ciliate Paramecium

Ciliate Paramecium move through the water using tiny hairs called cilia that they wave back and forth to swim. Ciliates are very fast swimmers. And because they move so fast, they burn up a great deal of energy so they have to eat large amounts of food or organic matter. They've even been known to eat dead water bears (tardigrade).

Dingle's Corner