

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

To be held on
September 8, 2023 at 3:00 PM

Agenda for the Meeting of the Engineering & Operations Committee
of the Crescenta Valley Water District

Posted September 7, 2023 at 3:00 PM

TELECONFERENCING NOTICE

This meeting will be conducted in person at the address listed above. Members of the public may also participate virtually by using a touchtone phone. You may select any of the following phone numbers (there are more than one for increased reliability during this time of increased phone traffic).

(669) 900-6833

(346) 248-7799

(929) 205-6099

(253) 215-8782

(301) 715-8592

(312) 626-6799

Then, enter Access Code: 824 4174 8185

Those members of the public who are able to and would like to additionally participate with a computer through videoconference may access the Zoom videoconferencing tool available at the following link:

<https://us02web.zoom.us/j/82441748185>

If there is a disruption of service, this meeting will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required.

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting the District by phone or in writing at customerservice@cvwd.com. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Call to Order

Adoption of Agenda

Public Comment:

At this time, members of the public shall have an opportunity to address the Committee on items of interest that are within the subject matter jurisdiction of this Committee. This opportunity is non-transferable, and speakers are limited to three (3) minutes each. Under the provisions of the Brown Act, the Board is prohibited from taking action on items not listed on the agenda, except under certain circumstances.

Action Item(s)

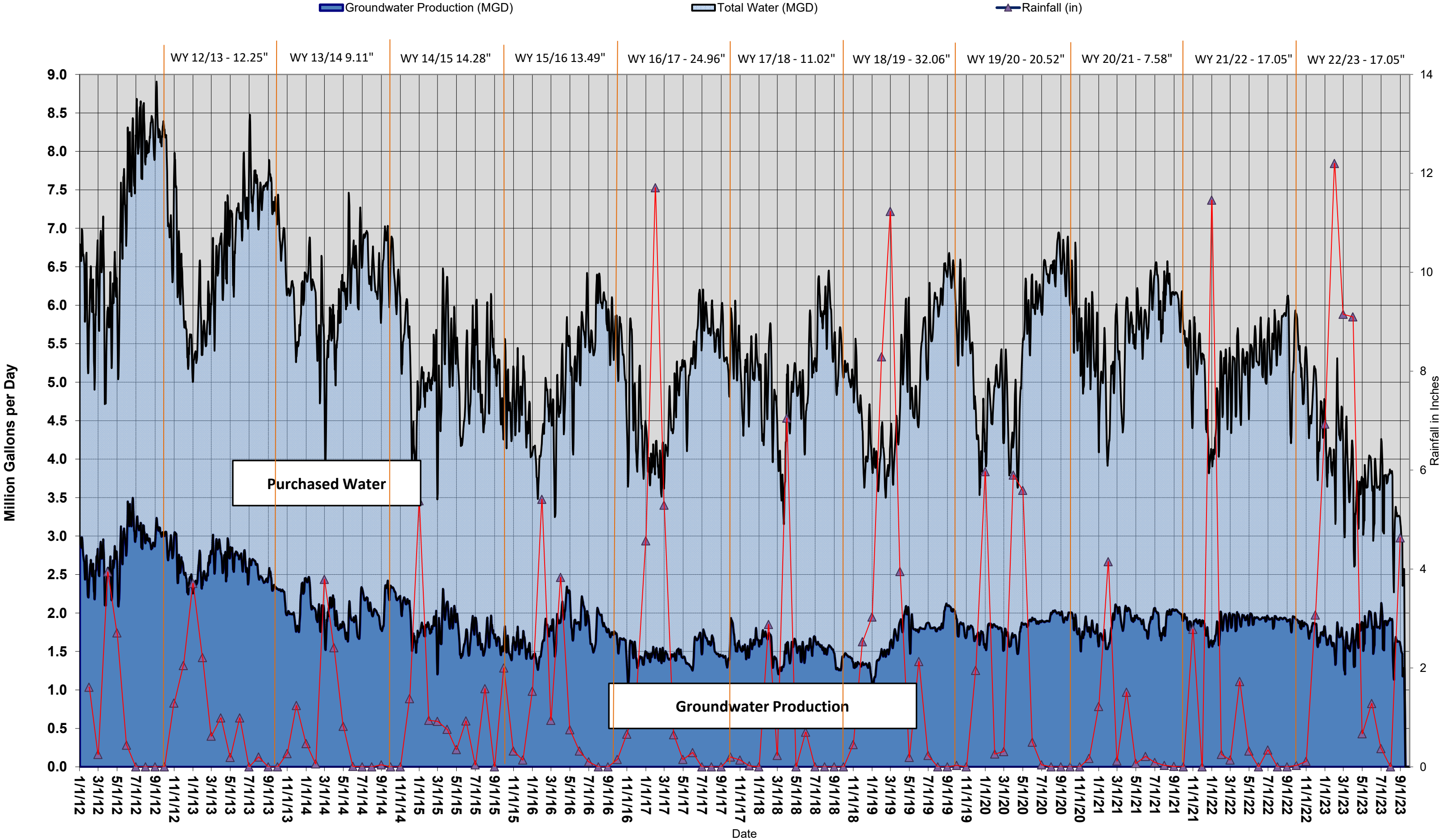
The public shall have an opportunity to comment on any action item as each item is considered by the Committee. This opportunity is non-transferrable, and speakers are limited to one two-minute (2) comment each.

1. Status of Local Water Supply
2. Update on Conversion to Chloramine Disinfection
3. Discussion of PFAS Update
4. Discussion of EV Charging Stations
5. Annual Pump and Well Contract
6. 23/24 Pipeline Design RFP
7. 22/23 CIP Update

Committee Members' Request for Future Agenda Items

Adjournment

Water Production Chart w/ Rainfall 2012-2023



CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 2
September 8, 2023

To: Engineering and Operations Committee
From: Brook Yared, M.S., P.E. – Interim Director of Engineering & Operations
Subject: Project Update – Conversion to Chloramines, Project E-995/E-1052

INFORMATION ITEM:

Disinfection Conversion to Chloramines, Project E-995/E-1052 - Project update of CVWD's disinfection conversion to chloramines

BACKGROUND:

In August 2018, with groundwater production not fully recovered from the past drought, CVWD's water supply blend shifted to 40% groundwater and 60% imported water. This, coupled with the additional chlorine needed to achieve breakpoint chlorination in the system, caused an increase in TTHM levels at the four (4) regulatory compliance points within the distribution system. Staff implemented a water quality sampling plan to measure levels of TTHMs weekly to ensure CVWD complies with DDW's Disinfection By-product Rule. As shown on the attached charts, since August 2018, CVWD's TTHM quarterly running annual average level has trended below the maximum contaminate level (MCL) of 80 micrograms/liter. Levels have been well below the MCL since these measures were implemented. Since starting this work in 2018, CVWD has installed new equipment to help reduce TTHM production while on free chlorine and reduce "water age". These improvements have the added benefit of contributing to more advanced control and monitoring strategies for chloramine disinfection.

On August 23, 2022, the Board authorized the award of contract for the Completion of the Conversion to Chloramines, E-1052. At that time, Brown and Caldwell had won the award with Helene Baribeau, Ph.D. Dr. Baribeau parted ways with Brown and Caldwell in December 2022. Dr. Baribeau indicated that she will not be able to keep the District on as a client in her new capacity.

After receiving direction from the Engineering Committee at our March 1, 2023, meeting, Staff has contracted with Water Quality and Treatment Solutions (WQTS), one of the lead consultants in the Chloramine permit development undertaken in 2018, to review all permitting requirements, assist in ordering any additional probes and/or analyzers, and developing a strategy to transition CVWD's water system to chloramine disinfection.

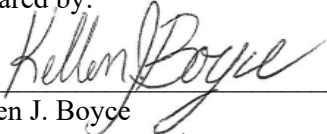
Since receiving this direction, staff has engaged with Apex Manufacturing Solutions (Apex) and WQTS. Additional materials have been ordered and installed, and the control study has been reviewed with staff and additional onsite visits were requested from Apex for support in the month of August

DISCUSSION:

WQTS has highlighted several issues in the system that might not perform well when we convert to Chloramines. The most notable of these issues is a water age issue surrounding the Cresta Heights reservoir and Zone 8. Cresta Heights has a lot of storage that serves a small population. Water can sit in this reservoir for longer periods than other higher demand zones in similar elevations. Staff plans to remove one of the tanks at Cresta Heights from operation, which should still provide for the demands in zone 8 and higher zones while greatly reducing the water age at the site.

There have also been recent reports and presentations that have caused concern. Helene Baribeau, CVWD's original consultant selected to assist with conversion to Chloramines, gave a presentation at AWWA's Water Education seminar held on August 17, 2023. CVWD's JPIA representative also provided staff with an article from a District that has returned to free chlorine disinfection after converting to chloramines. Each of the above highlighted issues with nitrification, red water, and maintaining adequate disinfection residuals as reasons why to stay with Free Chlorine. All of these items are being reviewed by WQTS. District staff plans to meet with WQTS in September to review and attempt to address these concerns.

Prepared by:



Kellen J. Boyce
Systems and Operations Manager

Submitted by:



Brook Yared, M.S., P.E.
Interim Director of Engineering & Operations

Attachments:

1. Chloramine Conversion Article - JPIA

g:\engineering committee\2023 ec memo\09082023\09-08-23 ecm - update on conversion to chloramines.docx

Chloramines- The Good & The Bad

An Evaluation of Chloramine Treatment for DBP Reduction

VO308

Introduction

In an effort to comply with EPA Disinfection By-Product (DBP) requirements, more and more water facilities have been switching disinfectants from free chlorine to chloramines, which are formed by mixing chlorine and ammonia. Chloramines offer some distinct advantages over free chlorine. As chloramines are weaker oxidants than chlorine, there are generally less reactions with organic matter, resulting in the formation of fewer regulated DBPs. The persistence of chloramines also allows residuals to last much longer in distribution systems.

Chloramines are not, however, without their own disadvantages. Though chloramines are safe for consumption in drinking water because digestion neutralizes them before they enter the bloodstream, other forms of intake can be dangerous. For example, chloramines have been shown to interfere with the proper absorption of oxygen if taken directly into the bloodstream; for this reason, they cannot be present in water used for kidney dialysis. Similarly, chloramines are toxic to fish (both freshwater and saltwater), reptiles, and amphibians.

Unregulated DBP Formation

Laboratory tests have also shown that chloraminated water contains concentrations of dissolved organic halogens (DOX), but many of these DOX constituents have yet to be fully identified. Although chlorine has been used to disinfect water for over 100 years, less than 50 percent of the DBPs in chlorinated drinking water have been identified. Only 17 percent of the DBPs formed by chloramines have been identified.¹

Chloramines are known to form many non-halogenated DBPs. Two such species related to chloramines are: iodoacids and nitrosamines. Iodoacids have been categorized as the most toxic and DNA-damaging DBP in mammalian cells, while nitrosamines can be 100–10,000-fold more carcinogenic than THMs.

The best known of these nitrosamines is N-nitrosodimethylamine (NDMA), but researchers have recognized the need to search out other known and unknown forms of nitrosamines to determine whether they too are problematic.

Unintended Consequences - Links to Increased Lead Levels

Recently, a switch to chloramines has been linked to excessive lead and copper corrosion in the distribution system. While the chloramine compound itself does not increase the potential for corrosion there are two ways in which the use of chloramine can indirectly affect corrosion of lead and copper. First, when chloramine is used in water treatment as a residual disinfectant, it can change the chemical properties of the water, which subsequently can impact lead and copper corrosion. Certain conditions related to pH, alkalinity, and dissolved inorganic carbonate levels in the water are associated with increased corrosivity, which can cause lead to more readily dissolve from pipe material. The decreases in pH and alkalinity associated with nitrification can increase the corrosive nature of the water and lead to problems with metals leaching from pipes.

Secondly, chloramines eliminate free chlorine. The oxidation strength of free chlorine and chloramines are quite different. The difference in oxidation strength can also affect the chemistry and solubility of metals in solution. While chloramines are a weak oxidant, chlorine is a strong oxidant. Experts suspect that free chlorine actually serves as a form of corrosion control treatment. The hypothesis is that it is the free chlorine that is contributing to metal leaching. Elemental chlorine combines to form an oxide with lead or copper to create a protective layer inside distribution system pipes/ plumbing, slowing the rate of lead corrosion. Since chloramine is not as strong of an oxidant, it does not form this same insoluble oxide and the result may be increased levels of dissolved metals.

Nitrification Risks

Another potential adverse outcome of chloramination is nitrification within the distribution system. Nitrification is a two-step microbially mediated process that involves the conversion of ammonia to nitrite by nitrosomonas, and then nitrite to nitrate by nitrobacters. The risk of nitrification is particularly high where water temperatures are warm (25-30 deg C) and distribution detention times are long. Water quality indicators of the occurrence of nitrification are listed below:

- Loss of disinfectant residual
- Increase in HPC (using R2A agar)
- Lowering of pH
- Decrease in alkalinity
- Reduced dissolved oxygen concentrations
- Increase in nitrite
- Increase in nitrate

The presence of nitrite or nitrate in the water supply can have acute health impacts causing methemoglobinemia, or blue baby syndrome, which is a blockage of oxygen transport in the bloodstream.² At greatest risk are infants below six months of age and those suffering from a genetic deficiency of certain enzymes. Pregnant women may also be at a higher risk of methemoglobinemia than the general population.

Once nitrification occurs in the distribution system, there is very little that systems can do in order to correct the problem. Water systems may periodically perform a free chlorine "burn", in which the system switches over to free chlorine disinfection for a few weeks out of the year in order to curb bacterial growth in the distribution system. Periodic flushing may also be used restore distribution system water quality. If nitrification episodes are frequent, one must consider the economic effects of water usage associated with increased flushing.

Increased Water Quality Analysis

Also associated with chloramination is a need for increased laboratory and field analysis. The ratio of chlorine and ammonia used to create chloramines must be carefully controlled. If too much chlorine is added, dichloramines can form, resulting in taste

and odor problems. If too little chlorine is added relative to ammonia, the excess free ammonia in the water can lead to nitrification in the distribution system. Laboratory analysis for monochloramine, total chlorine, and free ammonia can help water systems control the chloramination process. An online analyzer may also be used for this application.

Additionally, the ratio of chlorine and ammonia must be maintained when booster disinfecting. In order to properly booster disinfect chloraminated water, both chlorine and ammonia concentrations must be monitored, and often both chlorine and ammonia must be added to the water to maintain the correct ratio of both.

In order to proactively identify and prevent nitrification episodes, water systems may increase distribution system water quality monitoring. Parameters associated with nitrification include monochloramine, free ammonia, nitrite, nitrate, pH, alkalinity, HPC, and dissolved oxygen. These should be monitored regularly at various locations in the distribution system in order to establish a baseline for distribution system water quality so any problems can be quickly identified.

Finally, if nitrification results in increased distribution system flushing, basic water quality monitoring is recommended to control the flushing process. Recommended parameters for flushing include chlorine residual, pH, and turbidity, at a minimum.

Given the increased costs and labor that can result from chloramination and the conflicts water utilities now face on how to reduce the abundant known and unknown DBPs and keeping lead and nitrate levels low, perhaps the best solution is removing the precursors from the source water and staying with free chlorine.

Article Resources

¹ Dr. Michael J. Plewa, genetic toxicologist, U. of Illinois

² Nitrification Occurrence and Control in Chloraminated Water Systems [Project #710]

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 3
September 8, 2023

To: Engineering and Operations Committee
From: Brook Yared, MS, PE – Interim Director of Engineering and Operations
Subject: PFOS Sampling Results

INFORMATION ITEM:

Discussion of PFOS Regulations and Sampling Results

BACKGROUND:

Per- and polyfluoroalkyl substances (PFAS) are a group of more than 12,000 human-made substances that are not naturally occurring and are resistant to heat, water, and oil. These chemicals have been used and produced extensively in the United States for both commercial and industrial purposes, as well as for emergency fire response. Due to their unique chemistry, PFAS have been widely used as surface coatings and protectant formulations in consumer goods such as carpet and home textiles; clothing; food packaging; and non-stick cookware. PFAS substances have also been used as a surfactant in chrome plating, firefighting foam, and other industrial applications. In typical conditions, PFAS are resistant to degradation and do not break down in the environment. These substances can accumulate within the human body and are toxic at relatively low concentrations.

Discussion:

The District began its UCMR 5 testing in late February. Upon receiving results for the laboratory, the District informed the Department of Drinking Water (DDW) that there were sample results greater than the DDW notifications levels for PFOA, PFOS, and PFHxs. Samples collected at imported water only locations were all Not Detected for any PFOS substances. DDW requested the District perform confirmation samples and additional samples on the District's groundwater wells.

On April 19, 2023, the District collected confirmation samples at UCMR 5 sampling locations and samples from CVWD groundwater wells. These are the results that are summarized in the attached table. In summary, nearly half of the District's wells had PFOA or PFOS above the States Notification Levels and one location, Well 8, greater than the State's Response Level. Please note that Well 9 was undergoing rehabilitation and unable to be sampled.

Staff developed a mass balance at Glenwood to estimate the contribution of Well 8 on the combined flow exiting the Glenwood Nitrate Facility. The table below summarizes those results based on the average flows for the month of June 2023 and the sampling results collected in April. Additional samples were collected in June, July and August. The samples collected after April all show a large drop in concentrations of PFOA, PFOS and all other Gen-X constituents, but concentrations of certain wells were still above the proposed federal MCL.

After some discussion with DDW, it was determined that performing a mass balance at the Mills and Glenwood facilities would not provide enough data to calculate the concentration of PFAS constituents at the point of use. Based on this new mass balance, staff estimates that PFAS concentrations at the point of use is projected to be below the response level for PFOA, PFOS, and all Gen-X constituents for the time being.

What do the Results Mean:

At this time, CVWD's water supply still exceeds the Notification Levels, which are set by DDW. The District was required to notify the Board or Council members of all other agencies where the District serves water within a 30-day time frame. The District mailed letters to the appropriate persons, and the CVWD Board received a copy of that letter (See Attached). The District was also required to inform its own governing body within a 30-day time frame. This was done through an email from Mr. Lee. The District

is required to inform all its water customers within a 12-month period. Staff plans to accomplish this notification through the District's annual Consumer Confidence Report (CCR). There is required language, much like the letter that was sent out to other agencies. Unless the Board elects to send out a separate mailer, the CCR report would need to be completed and sent to customers the first week of June prior to the standard July 1, 2024 deadline.

Considering the recent samples taken and the new mass balance being calculated, CVWD can utilize blending as long as we provide a monthly report to DDW summarizing a daily mass balance at the point-of-use and submit that summary along with CVWD's regularly monthly/quarterly/annual water quality reporting (see attached).

Federal regulation limits are much lower than the current State limits. More than half of the District's wells would be over the 4 ppt MCL for PFOA and nearly half for PFOS. The other regulated substances referred to as the Gen X chemicals use a Hazard Index (HI) to calculate the MCL. The HI is a commonly used risk management approach for mixtures of chemicals (USEPA, 1986a; 2000a). In this approach, a ratio called a hazard quotient (HQ) is calculated for each of the four PFAS (PFHxS, HFPO-DA and its ammonium salt (also known as GenX chemicals), PFNA, and PFBS) by dividing an exposure metric. Using the index, it appears that the only vulnerable sources are Well 1, Well 11 and Well 8.

As this regulation has not been finalized, there is currently no timeframe for compliance. Once the regulation is promulgated, there will be a sampling period and a timeline for compliance. Should treatment beyond a blending scenario be necessary down the road, current treatment processes that can be effective for PFAS removal include granular activated carbon, ion exchange resins, and high-pressure membrane systems.

Prepared by:


Kellen J. Boyce
Systems & Operations Manager

Submitted by:


Brook Yared, MS, PE
Interim Director of Engineering & Operations

Attachments:

1. PFAS Sampling Results
2. PFOA and PFOS Concentration Summary

EPA 533 in ng/L

sample date
4/19/2023

Sample Description	PFBA	PFBS	PFDA	PFHpA	PFHpS	PFHxA	PFHxS	PFNA	PFOA	PFOS	PFPeA	PFPoS
Combined Wells 1, 5, 7, 9	3.9	6.5	ND	2.5	ND	7.3	5.0	ND	4.1	1.1	7.5	1.3
Combined Glenwood	5.0	4.5	ND	3.9	ND	9.2	4.0	0.8	7.1	6.3	9.6	0.91
Glenwood Plant	5.1	4.7	ND	4.1	ND	9.5	3.7	0.84	7.2	6.6	9.9	0.86
Encinal Reservoir	3.8	3.6	ND	2.5	ND	6.2	2.9	ND	4.3	4.0	6.4	0.68
Oak Creek Reservoir	3.0	3.1	ND	1.5	ND	3.9	2.5	ND	2.4	1.4	3.9	ND
Well 1	7.3	14	ND	4.8	ND	15	5.8	ND	8.8	2.0	13	1.4
Well 2	6.1	8.4	ND	4.0	ND	9.7	4.8	ND	5.9	2.5	12	1.1
Well 5	2.7	3.1	ND	1.4	ND	4.4	3.0	ND	2.2	0.93	5.4	1.0
Well 7	3.1	5.6	ND	2.1	ND	6.2	6.7	ND	2.8	0.95	5.5	1.5
Well 8	11	8.9	1.7	11	ND	22	5.4	3.2	23	21	22	1.1
Well 10	1.8	2.4	ND	0.78	ND	2.8	1.5	ND	0.85	ND	3.3	ND
Well 11	5.0	8.3	ND	4.4	ND	9.7	6.1	ND	6.6	4.9	9.6	1.1
Well 12	3.1	3.9	ND	2.0	ND	6.1	3.7	ND	2.0	0.72	6.5	0.89
Well 14	2.3	2.9	ND	1.2	ND	4.4	4.7	ND	1.5	ND	4.2	0.67
Well 16	2.3	2.9	ND	1.2	ND	3.5	2.5	ND	1.3	0.69	4.6	0.93
Pickens	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Proposed Federal MCL 4 MCL

Proposed Hazard Index regulation

Regulated by the State Division of Drinking Water

Note: PFOS substances that were Not Detected (ND) for all samples are not reported in this table

RED TEXT

Over the States Response Level

EPA 533 in ng/L

Gen X Sample Date
6/28/2023

Sample Description	HFPO-DA	PFBA	PFBS	PFHpA	PFHxA	PFHxS	PFNA	PFOA	PFOS	PFPeA
Glenwood Plant Blend	ND	4.6	6.0	2.3	6.6	4.2	ND	3.8	3.2	7.8
Goss Canyon #1	ND	4.0	3.9	1.6	4.4	3.0	ND	2.5	1.2	4.7
Markridge	ND	4.1	3.7	1.4	4.1	2.7	ND	2.3	1.1	4.4
Oak Creek #1	ND	3.7	3.7	1.6	4.1	2.5	ND	2.7	1.2	4.3
Oak Creek #2	ND	3.9	3.9	1.5	4.2	2.8	ND	2.5	1.3	4.8
Ocean View	ND	4.1	4.3	2.0	4.9	3.3	ND	3.0	1.9	5.7
Ordunio	ND	4.1	4.4	2.1	4.8	3.3	ND	2.9	2.0	5.8
Pahshall	ND	2.1	ND	ND	ND	ND	ND	ND	ND	0.86
Pickens	ND	1.7	2.1	0.92	2.3	1.5	ND	1.5	0.72	2.6
Rosemont	ND	3.1	3.5	1.5	4.0	2.5	ND	2.3	1.0	4.4
Shields	ND	3.1	3.6	1.6	4.1	2.7	ND	2.8	1.3	4.6
Cresta #1	ND	3.8	3.6	1.5	4.3	2.6	ND	2.5	1.2	4.4
Cresta #2	ND	3.7	3.6	1.5	3.9	2.7	ND	2.5	1.2	4.3
Dunsmore	ND	3.3	3.6	1.5	3.9	2.6	ND	2.4	1.1	4.3
Eagle	ND	3.9	3.5	1.5	3.9	2.8	ND	2.4	1.2	4.2
Edmund #1	ND	3.7	3.4	1.5	3.8	2.6	ND	2.6	1.2	4.2
Edmund #2	ND	3.1	3.7	1.6	4.1	2.9	ND	2.7	1.2	4.5
Encinal	ND	3.9	4.6	2	4.9	3	ND	3.1	2	5.6
Sampling Station at Fairmount and Briggs	ND	3.7	3.7	1.6	3.9	2.7	ND	2.5	1.2	4.6
2752 Pinelawn	ND	4.0	3.8	1.6	4.1	3.0	ND	2.7	1.4	4.6
3250 Brookhill	ND	4.0	3.7	1.5	4.1	2.8	ND	2.3	1.2	4.5
4715 Ramsdell	ND	4.0	3.8	1.5	4.0	3.0	ND	2.4	1.3	4.5
5603 Pineglen	ND	3.9	3.8	1.5	4.2	2.8	ND	2.6	1.3	4.6
Well 1	ND	5.7	11	3.7	10	6.2	ND	7.3	1.8	9.8
Well 2	ND	5.9	9.3	4.4	11	4.3	ND	5.6	2.1	12
Well 5	ND	3.1	4.6	1.6	5.0	3.5	ND	2.6	0.92	5.6
Well 7	ND	3.5	5.8	2.1	6.0	5.6	ND	3.0	0.83	6.1
Well 8	ND	7.0	8.9	3.3	9.3	5.1	ND	7.2	7.1	10
Well 9	ND	3.6	5.7	2.2	6.3	3.3	ND	3.5	0.93	6.6
Well 10	ND	2.3	3.2	0.94	3.0	1.9	ND	1.9	ND	3.9
Well 11	ND	6.0	11	5.2	10	7.6	ND	8.8	10	10
Well 12	ND	4.1	5.6	3.0	7.1	4.9	ND	3.1	0.87	8.1

Well 14 (out of service)										
Well 16	ND	2.5	2.8	1.2	3.8	2.6		1.2	0.68	4.6
Pickens	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND



Proposed Federal MCL 4



Proposed Hazard Index regulation



Regulated by the State Divison of Driking Water

Note: PFOS subatances that were Not Detedted (ND) for all samples are not reported in this table

RED TEXT

Over the States Response Level

What is a Hazard Index? The Hazard Index is a long-established tool that EPA regularly uses, for example in the Superfund program, to un

EPA 533 in ng/L

Gen X

Sample Date

7/19/2023

Sample Description	HFPO-DA	PFBA	PFBS	PFHpA	PFHxA	PFHxS	PFNA	PFOA	PFOS	PFPeA	PFPeS
Glenwood Plant Blend	ND	3.8	5.7	2.5	6.4	4.0	ND	3.5	2.4	6.7	1.2
Combined Wells 1, 5, 7 & 8	ND	3.5	6.3	2.3	6	4.5	ND	3.2	0.94	6.5	1.2
Well 8	ND	5.9	8	2.9	8.2	5.4	0.68	5.7	6.1	8.7	1.6

CVWD Glenwood PFOA Concentration Summary – April 2023

Date	Glenwood Well 8 GPM	Hours	PFOA, ng/L	Glenwood Well 10 GPM	Hours	PFOA, ng/L	Glenwood Well 12 GPM	Hours	PFOA, ng/L	Glenwood Well 14 GPM	Hours	PFOA, ng/L	Glenwood Well 16 GPM	Hours	PFOA, ng/L	Glenwood Booster Pump Discharge, GPM	Calculated PFOA in effluent, ng/L	Sampled PFOA in effluent, ng/L
1-Apr-23	166.93	24.00		42.68	24.00		119.29	24.00		175.00	24.00		98.00	24.00		622.08	7.24	
2-Apr-23	167.50	24.00		43.03	24.00		120.44	24.00		177.21	24.00		98.00	24.00		625.48	7.23	
3-Apr-23	166.30	24.00		43.07	24.00		121.35	24.00		179.13	24.00		98.00	24.00		629.63	7.15	
4-Apr-23	164.00	24.00		43.19	24.00		122.25	24.00		179.46	24.00		98.00	24.00		628.29	7.08	
5-Apr-23	163.70	24.00		43.10	24.00		122.57	24.00		180.83	24.00		98.00	24.00		630.73	7.05	
6-Apr-23	163.45	24.00		42.72	24.00		123.62	24.00		181.92	24.00		98.00	24.00		629.69	7.06	
7-Apr-23	163.43	24.00		42.65	24.00		124.80	24.00		183.29	24.00		98.00	24.00		633.77	7.02	
8-Apr-23	163.17	24.00		42.63	24.00		124.99	24.00		183.38	24.00		98.21	24.00		636.50	6.98	
9-Apr-23	162.90	24.00		42.51	24.00		126.36	24.00		182.71	24.00		98.08	24.00		633.60	7.00	
10-Apr-23	162.78	24.00		42.34	24.00		127.80	24.00		182.08	24.00		97.96	24.00		632.31	7.02	
11-Apr-23	162.52	24.00		42.33	24.00		128.58	24.00		183.50	24.00		98.08	24.00		638.40	6.95	
12-Apr-23	162.57	24.00		14.35	24.00		131.10	24.00		182.72	24.00		98.00	24.00		596.94	7.40	
13-Apr-23	162.93	24.00		29.74	24.00		50.39	24.00		185.33	24.00		98.17	24.00		535.94	7.98	
14-Apr-23	165.00	24.00		47.22	24.00		90.95	24.00		187.00	24.00		98.13	24.00		507.75	8.72	
15-Apr-23	165.00	24.00		47.23	24.00		148.10	24.00		187.63	24.00		97.96	24.00		496.21	9.15	
16-Apr-23	165.00	24.00		47.26	24.00		146.34	24.00		189.00	24.00		98.33	24.00		638.06	7.11	
17-Apr-23	170.20	24.00		47.33	24.00		144.95	24.00		189.33	24.00		98.25	24.00		678.60	6.86	
18-Apr-23	170.10	24.00		47.02	24.00		144.95	24.00		189.54	24.00		98.17	24.00		683.08	6.81	
19-Apr-23	170.83	24.00	23.00	46.80	24.00	0.85	145.20	24.00	2.00	190.00	24.00	1.50	98.33	24.00	1.30	579.00	8.07	7.10
20-Apr-23	170.60	24.00		46.49	24.00		145.95	24.00		190.00	24.00		99.75	24.00		593.71	7.87	
21-Apr-23	170.32	24.00		46.33	24.00		146.89	24.00		200.38	24.00		99.79	24.00		671.23	6.97	
22-Apr-23	170.38	24.00		45.96	24.00		147.01	24.00		199.50	24.00		99.96	24.00		692.94	6.76	
23-Apr-23	170.55	24.00		46.34	24.00		147.14	24.00		199.38	24.00		99.83	24.00		684.67	6.84	
24-Apr-23	171.12	24.00		46.23	24.00		148.26	24.00		199.50	24.00		48.96	24.00		646.21	7.17	
25-Apr-23	171.27	24.00		46.30	24.00		148.70	24.00		199.38	24.00		45.79	24.00		638.81	7.25	
26-Apr-23	171.07	24.00		45.39	24.00		149.21	24.00		199.58	24.00		106.04	24.00		707.10	6.66	
27-Apr-23	171.12	24.00		45.46	24.00		149.96	24.00		200.08	24.00		105.75	24.00		702.85	6.70	
28-Apr-23	171.27	24.00		46.05	24.00		150.63	24.00		200.71	0.00		105.00	24.00		694.00	6.36	
29-Apr-23	171.47	24.00		45.89	24.00		151.01	24.00		201.50	0.00		104.29	24.00		708.44	6.24	
30-Apr-23	171.65	24.00		45.84	24.00		152.07	24.00		202.58	0.00		104.29	24.00		693.25	6.39	

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Glenwood PFOS Concentration Summary – April 2023

Date	Glenwood Well 8 GPM	Hours	PFOS, ng/L	Glenwood Well 10 GPM	Hours	PFOS, ng/L	Glenwood Well 12 GPM	Hours	PFOS, ng/L	Glenwood Well 14 GPM	Hours	PFOS, ng/L	Glenwood Well 16 GPM	Hours	PFOS, ng/L	Glenwood Booster Pump Discharge, GPM	Calculated PFOS in effluent, ng/L	Sampled PFOS in effluent, ng/L
1-Apr-23	166.93	24.00		42.68	24.00		119.29	24.00		175.00	24.00		98.00	24.00		622.08	5.88	
2-Apr-23	167.50	24.00		43.03	24.00		120.44	24.00		177.21	24.00		98.00	24.00		625.48	5.87	
3-Apr-23	166.30	24.00		43.07	24.00		121.35	24.00		179.13	24.00		98.00	24.00		629.63	5.79	
4-Apr-23	164.00	24.00		43.19	24.00		122.25	24.00		179.46	24.00		98.00	24.00		628.29	5.73	
5-Apr-23	163.70	24.00		43.10	24.00		122.57	24.00		180.83	24.00		98.00	24.00		630.73	5.70	
6-Apr-23	163.45	24.00		42.72	24.00		123.62	24.00		181.92	24.00		98.00	24.00		629.69	5.70	
7-Apr-23	163.43	24.00		42.65	24.00		124.80	24.00		183.29	24.00		98.00	24.00		633.77	5.66	
8-Apr-23	163.17	24.00		42.63	24.00		124.99	24.00		183.38	24.00		98.21	24.00		636.50	5.63	
9-Apr-23	162.90	24.00		42.51	24.00		126.36	24.00		182.71	24.00		98.08	24.00		633.60	5.65	
10-Apr-23	162.78	24.00		42.34	24.00		127.80	24.00		182.08	24.00		97.96	24.00		632.31	5.66	
11-Apr-23	162.52	24.00		42.33	24.00		128.58	24.00		183.50	24.00		98.08	24.00		638.40	5.60	
12-Apr-23	162.57	24.00		14.35	24.00		131.10	24.00		182.72	24.00		98.00	24.00		596.94	5.99	
13-Apr-23	162.93	24.00		29.74	24.00		50.39	24.00		185.33	24.00		98.17	24.00		535.94	6.58	
14-Apr-23	165.00	24.00		47.22	24.00		90.95	24.00		187.00	24.00		98.13	24.00		507.75	7.09	
15-Apr-23	165.00	24.00		47.23	24.00		148.10	24.00		187.63	24.00		97.96	24.00		496.21	7.33	
16-Apr-23	165.00	24.00		47.26	24.00		146.34	24.00		189.00	24.00		98.33	24.00		638.06	5.70	
17-Apr-23	170.20	24.00		47.33	24.00		144.95	24.00		189.33	24.00		98.25	24.00		678.60	5.52	
18-Apr-23	170.10	24.00		47.02	24.00		144.95	24.00		189.54	24.00		98.17	24.00		683.08	5.48	
19-Apr-23	170.83	24.00	21.00	46.80	24.00	0.00	145.20	24.00	0.72	190.00	24.00	0.00	98.33	24.00	0.69	579.00	6.49	6.30
20-Apr-23	170.60	24.00		46.49	24.00		145.95	24.00		190.00	24.00		99.75	24.00		593.71	6.33	
21-Apr-23	170.32	24.00		46.33	24.00		146.89	24.00		200.38	24.00		99.79	24.00		671.23	5.59	
22-Apr-23	170.38	24.00		45.96	24.00		147.01	24.00		199.50	24.00		99.96	24.00		692.94	5.42	
23-Apr-23	170.55	24.00		46.34	24.00		147.14	24.00		199.38	24.00		99.83	24.00		684.67	5.49	
24-Apr-23	171.12	24.00		46.23	24.00		148.26	24.00		199.50	24.00		48.96	24.00		646.21	5.78	
25-Apr-23	171.27	24.00		46.30	24.00		148.70	24.00		199.38	24.00		45.79	24.00		638.81	5.85	
26-Apr-23	171.07	24.00		45.39	24.00		149.21	24.00		199.58	24.00		106.04	24.00		707.10	5.34	
27-Apr-23	171.12	24.00		45.46	24.00		149.96	24.00		200.08	24.00		105.75	24.00		702.85	5.37	
28-Apr-23	171.27	24.00		46.05	24.00		150.63	24.00		200.71	0.00		105.00	24.00		694.00	5.44	
29-Apr-23	171.47	24.00		45.89	24.00		151.01	24.00		201.50	0.00		104.29	24.00		708.44	5.34	
30-Apr-23	171.65	24.00		45.84	24.00		152.07	24.00		202.58	0.00		104.29	24.00		693.25	5.46	
Average	167.30	24.00	21.00	43.45	24.00	0.00	133.36	24.00	0.72	188.03	21.60	0.00	96.10	24.00	0.69	636.31	5.82	6.30

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Glenwood PFOA Concentration Summary – June 2023

Date	Glenwood Well 8 GPM	Hours	PFOA, ng/L	Glenwood Well 10 GPM	Hours	PFOA, ng/L	Glenwood Well 12 GPM	Hours	PFOA, ng/L	Glenwood Well 14 GPM	Hours	PFOA, ng/L	Glenwood Well 16 GPM	Hours	PFOA, ng/L	Glenwood Booster Pump Discharge, GPM	Hours	Calculated PFOA in effluent, ng/L	Sampled PFOA in effluent, ng/L	Glenwood Well 5 GPM	Hours	PFOA, ng/L	Glenwood Well 11 GPM	Hours	PFOA, ng/L	FMWD Briggs Flow, GPM	Hours	PFOA, ng/L	Calculated PFOA at Point of Use ng/L	Sampled PFOA at Point of Use
1-Jun-23	171.48	24.00		45.94	24.00		162.50	24.00		182.21	24.00		101.29	24.00		668.29	24.00	2.91		184.62	24		93.73	24		404.03	24		2.85	
2-Jun-23	171.65	24.00		45.67	24.00		163.28	24.00		180.79	24.00		101.25	24.00		685.44	24.00	2.85		139.29	24		94.63	24		283.29	24		3.16	
3-Jun-23	171.57	24.00		45.93	24.00		163.20	24.00		177.21	24.00		101.38	24.00		672.48	24.00	2.90		142.37	24		94.95	24		293.52	24		3.13	
4-Jun-23	171.67	24.00		45.91	24.00		163.19	24.00		177.38	24.00		100.75	24.00		686.85	24.00	2.84		138.86	24		94.23	24		337.73	24		3.02	
5-Jun-23	165.08	24.00		45.91	24.00		159.78	24.00		178.08	24.00		100.92	24.00		665.94	24.00	2.84		135.38	24		95.50	24		359.45	24		2.96	
6-Jun-23	158.67	24.00		45.80	24.00		154.99	24.00		186.71	24.00		100.63	24.00		670.85	24.00	2.73		134.47	24		96.52	24		347.07	24		3.00	
7-Jun-23	158.13	24.00		46.03	24.00		155.54	24.00		192.67	24.00		100.42	24.00		680.38	24.00	2.69		134.47	24		96.52	24		347.07	24		3.01	
8-Jun-23	158.13	24.00		46.05	24.00		156.04	24.00		192.13	24.00		100.54	24.00		674.15	24.00	2.72		189.89	24		94.77	24		315.88	24		3.05	
9-Jun-23	157.88	24.00		46.12	24.00		156.50	24.00		192.04	24.00		100.38	24.00		665.50	24.00	2.75		200.71	24		94.28	24		325.10	24		3.02	
10-Jun-23	157.87	24.00		46.20	24.00		155.68	24.00		191.83	24.00		100.33	24.00		680.54	24.00	2.69		196.84	24		95.42	24		314.36	24		3.06	
11-Jun-23	159.37	24.00		45.91	24.00		156.13	24.00		191.96	24.00		100.21	24.00		686.46	24.00	2.68		205.18	24		95.85	24		315.50	24		3.06	
12-Jun-23	164.02	24.00		45.92	24.00		155.84	24.00		191.46	24.00		100.67	24.00		670.65	24.00	2.79		202.92	24		94.73	24		304.26	24		3.07	
13-Jun-23	163.92	24.00		45.95	24.00		155.66	24.00		191.54	24.00		100.71	24.00		676.35	24.00	2.77		205.09	24		95.37	24		290.62	24		3.11	
14-Jun-23	163.27	24.00		46.09	24.00		155.25	24.00		191.46	24.00		100.83	24.00		672.96	24.00	2.77		204.60	24		95.43	24		277.61	24		3.14	
15-Jun-23	163.08	24.00		46.03	24.00		155.33	24.00		191.21	24.00		101.17	24.00		688.38	24.00	2.71		203.61	24		95.42	24		328.88	24		3.03	
16-Jun-23	162.47	24.00		45.90	24.00		155.43	24.00		190.79	24.00		101.67	24.00		687.08	24.00	2.71		203.25	24		94.95	24		348.21	24		2.98	
17-Jun-23	162.52	24.00		46.03	24.00		155.76	24.00		190.88	24.00		101.96	24.00		682.48	24.00	2.73		204.90	24		95.40	24		369.93	24		2.93	
18-Jun-23	162.15	24.00		45.98	24.00		157.55	24.00		191.58	24.00		101.83	24.00		685.54	24.00	2.72		202.94	24		94.72	24		370.18	24		2.93	
19-Jun-23	161.92	24.00		45.89	24.00		157.34	24.00		191.08	24.00		101.08	24.00		683.35	24.00	2.72		204.15	24		94.90	24		368.67	24		2.93	
20-Jun-23	162.93	24.00		45.96	24.00		157.67	24.00		190.33	24.00		100.71	24.00		678.60	24.00	2.76		207.41	24		95.02	24		375.99	24		2.91	
21-Jun-23	170.40	24.00		45.90	24.00		157.98	24.00		192.63	24.00		100.88	24.00		698.50	24.00	2.76		254.23	24		95.15	24		525.53	24		2.64	
22-Jun-23	174.13	24.00		45.93	24.00		157.67	24.00		193.67	24.00		100.71	24.00		686.52	24.00	2.84		192.09	24		95.35	24		496.86	24		2.68	
23-Jun-23	174.15	24.00		45.92	24.00		157.89	24.00		193.46	24.00		100.42	24.00		707.77	24.00	2.76		158.94	24		95.73	24		596.01	24		2.53	
24-Jun-23	174.15	24.00		45.98	24.00		158.07	24.00		193.08	24.00		100.67	24.00		698.52	24.00	2.79		156.18	24		94.88	24		479.43	24		2.73	
25-Jun-23	174.23	24.00		45.82	24.00		157.79	24.00		192.88	24.00		100.58	24.00		711.91	24.00	2.74		152.81	24		95.30	24		472.74	24		2.75	
26-Jun-23	170.28	24.00		45.93	24.00		157.93	24.00		195.71	24.00		100.38	24.00		694.42	24.00	2.77		155.66	24		93.63	24		434.98	24		2.81	
27-Jun-23	174.12	24.00		45.95	24.00		158.19	24.00		191.00	24.00		100.33	24.00		652.29	24.00	2.99		198.89	24		94.92	24		282.53	24		3.12	
28-Jun-23	174.88	24.00	7.20	46.15	24.00	1.90	158.52	24.00	3.10	0.00	0.00	0.00	100.63	24.00	1.20	504.75	24.00	3.88	3.80	158.81	24	2.6	95.92	24	8.8	305.01	24	0.00	2.98	3.1
29-Jun-23	174.92	24.00		46.20	24.00		158.20	24.00		0.00	0.00		101.00	24.00		509.31	24.00	3.85		158.14	24		95.83	24		299.08	24		3.00	
30-Jun-23	175.07	24.00		45.97	24.00		158.03	24.00		0.00	0.00		100.88	24.00		504.06	24.00	3.89		162.00	24		97.05	24		325.85	24		2.93	

*Sampling date highlighted in blue.
** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Glenwood PFOS Concentration Summary – June 2023

Date	Glenwood Well 8 GPM	Hours	PFOS, ng/L	Glenwood Well 10 GPM	Hours	PFOS, ng/L	Glenwood Well 12 GPM	Hours	PFOS, ng/L	Glenwood Well 14 GPM	Hours	PFOS, ng/L	Glenwood Well 16 GPM	Hours	PFOS, ng/L	Glenwood Booster Pump Discharge, GPM	Hours	Calculated PFOS in effluent, ng/L	Sampled PFOS in effluent, ng/L	Glenwood Well 5 GPM	Hours	PFOS, ng/L	Glenwood Well 11 GPM	Hours	PFOS, ng/L	FMWD Briggs Flow, GPM	Hours	PFOS, ng/L	Calculated PFOA at Point of Use ng/L	Sampled PFOA at Point of Use
1-Jun-23	171.48	24.00		45.94	24.00		162.50	24.00		182.21	24.00		101.29	24.00		668.29	24.00	2.14		184.62	24		93.73	24		404.03	24		2.40	
2-Jun-23	171.65	24.00		45.67	24.00		163.28	24.00		180.79	24.00		101.25	24.00		685.44	24.00	2.09		139.29	24		94.63	24		283.29	24		2.72	
3-Jun-23	171.57	24.00		45.93	24.00		163.20	24.00		177.21	24.00		101.38	24.00		672.48	24.00	2.13		142.37	24		94.95	24		293.52	24		2.69	
4-Jun-23	171.67	24.00		45.91	24.00		163.19	24.00		177.38	24.00		100.75	24.00		686.85	24.00	2.08		138.86	24		94.23	24		337.73	24		2.60	
5-Jun-23	165.08	24.00		45.91	24.00		159.78	24.00		178.08	24.00		100.92	24.00		665.94	24.00	2.07		135.38	24		95.50	24		359.45	24		2.56	
6-Jun-23	158.67	24.00		45.80	24.00		154.99	24.00		186.71	24.00		100.63	24.00		670.85	24.00	1.98		134.47	24		96.52	24		347.07	24		2.59	
7-Jun-23	158.13	24.00		46.03	24.00		155.54	24.00		192.67	24.00		100.42	24.00		680.38	24.00	1.95		134.47	24		96.52	24		347.07	24		2.60	
8-Jun-23	158.13	24.00		46.05	24.00		156.04	24.00		192.13	24.00		100.54	24.00		674.15	24.00	1.97		189.89	24		94.77	24		315.88	24		2.57	
9-Jun-23	157.88	24.00		46.12	24.00		156.50	24.00		192.04	24.00		100.38	24.00		665.50	24.00	1.99		200.71	24		94.28	24		325.10	24		2.53	
10-Jun-23	157.87	24.00		46.20	24.00		155.68	24.00		191.83	24.00		100.33	24.00		680.54	24.00	1.95		196.84	24		95.42	24		314.36	24		2.57	
11-Jun-23	159.37	24.00		45.91	24.00		156.13	24.00		191.96	24.00		100.21	24.00		686.46	24.00	1.95		205.18	24		95.85	24		315.50	24		2.57	
12-Jun-23	164.02	24.00		45.92	24.00		155.84	24.00		191.46	24.00		100.67	24.00		670.65	24.00	2.04		202.92	24		94.73	24		304.26	24		2.58	
13-Jun-23	163.92	24.00		45.95	24.00		155.66	24.00		191.54	24.00		100.71	24.00		676.35	24.00	2.02		205.09	24		95.37	24		290.62	24		2.61	
14-Jun-23	163.27	24.00		46.09	24.00		155.25	24.00		191.46	24.00		100.83	24.00		672.96	24.00	2.03		204.60	24		95.43	24		277.61	24		2.64	
15-Jun-23	163.08	24.00		46.03	24.00		155.33	24.00		191.21	24.00		101.17	24.00		688.38	24.00	1.98		203.61	24		95.42	24		328.88	24		2.54	
16-Jun-23	162.47	24.00		45.90	24.00		155.43	24.00		190.79	24.00		101.67	24.00		687.08	24.00	1.98		203.25	24		94.95	24		348.21	24		2.50	
17-Jun-23	162.52	24.00		46.03	24.00		155.76	24.00		190.88	24.00		101.96	24.00		682.48	24.00	1.99		204.90	24		95.40	24		369.93	24		2.46	
18-Jun-23	162.15	24.00		45.98	24.00		157.55	24.00		191.58	24.00		101.83	24.00		685.54	24.00	1.98		202.94	24		94.72	24		370.18	24		2.46	
19-Jun-23	161.92	24.00		45.89	24.00		157.34	24.00		191.08	24.00		101.08	24.00		683.35	24.00	1.98		204.15	24		94.90	24		368.67	24		2.46	
20-Jun-23	162.93	24.00		45.96	24.00		157.67	24.00		190.33	24.00		100.71	24.00		678.60	24.00	2.01		207.41	24		95.02	24		375.99	24		2.44	
21-Jun-23	170.40	24.00		45.90	24.00		157.98	24.00		192.63	24.00		100.88	24.00		698.50	24.00	2.03		254.23	24		95.15	24		525.53	24		2.17	
22-Jun-23	174.13	24.00		45.93	24.00		157.67	24.00		193.67	24.00		100.71	24.00		686.52	24.00	2.10		192.09	24		95.35	24		496.86	24		2.26	
23-Jun-23	174.15	24.00		45.92	24.00		157.89	24.00		193.46	24.00		100.42	24.00		707.77	24.00	2.04		158.94	24		95.73	24		596.01	24		2.16	
24-Jun-23	174.15	24.00		45.98	24.00		158.07	24.00		193.08	24.00		100.67	24.00		698.52	24.00	2.06		156.18	24		94.88	24		479.43	24		2.33	
25-Jun-23	174.23	24.00		45.82	24.00		157.79	24.00		192.88	24.00		100.58	24.00		711.91	24.00	2.03		152.81	24		95.30	24		472.74	24		2.35	
26-Jun-23	170.28	24.00		45.93	24.00		157.93	24.00		195.71	24.00		100.38	24.00		694.42	24.00	2.04		155.66	24		93.63	24		434.98	24		2.39	
27-Jun-23	174.12	24.00		45.95	24.00		158.19	24.00		191.00	24.00		100.33	24.00		652.29	24.00	2.21		198.89	24		94.92	24		282.53	24		2.62	
28-Jun-23	174.88	24.00	7.10	46.15	24.00	0.00	158.52	24.00	0.87	0.00	0.00	0.00	100.63	24.00	0.68	504.75	24.00	2.87	3.20	158.81	24	0.92	95.92	24	10	305.01	24	0	2.56	2
29-Jun-23	174.92	24.00		46.20	24.00		158.20	24.00		0.00	0.00		101.00	24.00		509.31	24.00	2.84		158.14	24		95.83	24		299.08	24		2.57	
30-Jun-23	175.07	24.00		45.97	24.00		158.03	24.00		0.00	0.00		100.88	24.00		504.06	24.00	2.87		162.00	24		97.05	24		325.85	24		2.51	

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Mills PFOA Concentration Summary – April 2023

Date	Well 1 GPM	Hours	PFOA, ng/L	Mills Well 5 GPM	Hours	PFOA, ng/L	Well 7 GPM	Hours	PFOA, ng/L	Well 9 GPM	Hours	PFOA, ng/L	Mills Booster Pump Discharge, GPM	Hours	Calculated PFOA in effluent (forebay), ng/L	Sampled PFOA in effluent (forebay), ng/L
1-Apr-23	92.56	12.00		157.30	12.00		232.50	12.00		0.00	0.00		459.48	12.00	3.94	
2-Apr-23	93.35	12.00		154.10	12.00		233.67	12.00		0.00	0.00		451.46	12.00	4.02	
3-Apr-23	92.98	12.00		154.97	12.00		233.97	12.00		0.00	0.00		452.15	12.00	4.01	
4-Apr-23	93.48	12.00		148.69	12.00		234.77	12.00		0.00	0.00		448.48	12.00	4.03	
5-Apr-23	93.61	14.00		142.77	14.00		234.31	14.00		0.00	0.00		443.73	14.00	4.04	
6-Apr-23	94.23	10.00		145.93	10.00		235.52	10.00		0.00	0.00		442.20	10.00	4.09	
7-Apr-23	93.50	16.50		145.25	16.50		235.39	16.50		0.00	0.00		446.63	17.00	3.91	
8-Apr-23	93.17	24.00		147.50	24.00		232.77	24.00		0.00	0.00		447.79	24.00	4.01	
9-Apr-23	93.38	24.00		147.39	24.00		231.47	24.00		0.00	0.00		442.98	24.00	4.05	
10-Apr-23	93.44	24.00		144.98	24.00		230.95	24.00		0.00	0.00		440.11	24.00	4.06	
11-Apr-23	93.08	24.00		144.63	24.00		230.47	24.00		0.00	0.00		436.22	24.00	4.09	
12-Apr-23	92.89	11.50		145.43	11.50		230.26	11.50		0.00	0.00		441.20	11.50	4.04	
13-Apr-23	97.00	0.50		161.20	0.50		238.40	0.50		0.00	0.00		390.50	0.50	4.80	
14-Apr-23	94.01	24.00		150.91	24.00		235.65	24.00		0.00	0.00		450.89	24.00	4.03	
15-Apr-23	93.93	24.00		147.06	24.00		232.60	24.00		0.00	0.00		444.47	24.00	4.05	
16-Apr-23	93.83	24.00		152.32	24.00		231.62	24.00		0.00	0.00		445.84	24.00	4.06	
17-Apr-23	93.83	24.00		147.25	24.00		231.03	24.00		0.00	0.00		441.03	24.00	4.07	
18-Apr-23	93.57	24.00		147.47	24.00		230.68	24.00		0.00	0.00		440.23	24.00	4.07	
19-Apr-23	93.73	20.50	8.80	146.11	20.50	2.20	230.75	20.50	2.80	0.00	0.00		438.93	20.50	4.08	4.10
20-Apr-23	94.83	12.00		150.96	12.00		235.80	12.00		0.00	0.00		449.40	12.00	4.07	
21-Apr-23	94.85	12.00		144.08	12.00		237.03	12.00		0.00	0.00		445.50	12.00	4.07	
22-Apr-23	94.79	16.50		149.30	16.00		237.26	16.50		0.00	0.00		450.83	16.50	4.03	
23-Apr-23	94.05	24.00		144.98	24.00		233.82	24.00		0.00	0.00		443.67	24.00	4.06	
24-Apr-23	94.43	24.00		144.30	24.00		232.30	24.00		0.00	0.00		440.11	24.00	4.09	
25-Apr-23	94.28	22.50		151.03	22.50		231.63	22.50		0.00	0.00		444.40	22.50	4.07	
26-Apr-23	94.98	15.00		145.04	15.00		236.51	15.00		0.00	0.00		444.95	15.00	4.08	
27-Apr-23	94.72	15.00		151.67	15.00		237.09	15.00		0.00	0.00		449.53	15.00	4.07	
28-Apr-23	95.55	15.00		148.07	15.00		237.25	15.00		0.00	0.00		452.28	15.00	4.05	
29-Apr-23	95.38	16.50		150.92	16.50		237.45	16.50		0.00	0.00		448.00	16.50	4.10	
30-Apr-23	94.99	24.00		148.55	24.00		234.07	24.00		0.00	0.00		444.58	24.00	4.09	

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Mills PFOS Concentration Summary – April 2023

Date	Well 1 GPM	Hours	PFOS, ng/L	Mills Well 5 GPM	Hours	PFOS, ng/L	Well 7 GPM	Hours	PFOS, ng/L	Well 9 GPM	Hours	PFOS, ng/L	Mills Booster Pump Discharge, GPM	Hours	Calculated PFOS in effluent (forebay), ng/L	Sampled PFOS in effluent (forebay), ng/L
1-Apr-23	92.56	12.00		157.30	12.00		232.50	12.00		0.00	0.00		459.48	12.00	1.20	
2-Apr-23	93.35	12.00		154.10	12.00		233.67	12.00		0.00	0.00		451.46	12.00	1.22	
3-Apr-23	92.98	12.00		154.97	12.00		233.97	12.00		0.00	0.00		452.15	12.00	1.22	
4-Apr-23	93.48	12.00		148.69	12.00		234.77	12.00		0.00	0.00		448.48	12.00	1.22	
5-Apr-23	93.61	14.00		142.77	14.00		234.31	14.00		0.00	0.00		443.73	14.00	1.22	
6-Apr-23	94.23	10.00		145.93	10.00		235.52	10.00		0.00	0.00		442.20	10.00	1.24	
7-Apr-23	93.50	16.50		145.25	16.50		235.39	16.50		0.00	0.00		446.63	17.00	1.19	
8-Apr-23	93.17	24.00		147.50	24.00		232.77	24.00		0.00	0.00		447.79	24.00	1.22	
9-Apr-23	93.38	24.00		147.39	24.00		231.47	24.00		0.00	0.00		442.98	24.00	1.23	
10-Apr-23	93.44	24.00		144.98	24.00		230.95	24.00		0.00	0.00		440.11	24.00	1.23	
11-Apr-23	93.08	24.00		144.63	24.00		230.47	24.00		0.00	0.00		436.22	24.00	1.24	
12-Apr-23	92.89	11.50		145.43	11.50		230.26	11.50		0.00	0.00		441.20	11.50	1.22	
13-Apr-23	97.00	0.50		161.20	0.50		238.40	0.50		0.00	0.00		390.50	0.50	1.46	
14-Apr-23	94.01	24.00		150.91	24.00		235.65	24.00		0.00	0.00		450.89	24.00	1.22	
15-Apr-23	93.93	24.00		147.06	24.00		232.60	24.00		0.00	0.00		444.47	24.00	1.23	
16-Apr-23	93.83	24.00		152.32	24.00		231.62	24.00		0.00	0.00		445.84	24.00	1.23	
17-Apr-23	93.83	24.00		147.25	24.00		231.03	24.00		0.00	0.00		441.03	24.00	1.23	
18-Apr-23	93.57	24.00		147.47	24.00		230.68	24.00		0.00	0.00		440.23	24.00	1.23	
19-Apr-23	93.73	20.50	2.00	146.11	20.50	0.93	230.75	20.50	0.95	0.00	0.00		438.93	20.50	1.24	1.10
20-Apr-23	94.83	12.00		150.96	12.00		235.80	12.00		0.00	0.00		449.40	12.00	1.23	
21-Apr-23	94.85	12.00		144.08	12.00		237.03	12.00		0.00	0.00		445.50	12.00	1.23	
22-Apr-23	94.79	16.50		149.30	16.00		237.26	16.50		0.00	0.00		450.83	16.50	1.22	
23-Apr-23	94.05	24.00		144.98	24.00		233.82	24.00		0.00	0.00		443.67	24.00	1.23	
24-Apr-23	94.43	24.00		144.30	24.00		232.30	24.00		0.00	0.00		440.11	24.00	1.24	
25-Apr-23	94.28	22.50		151.03	22.50		231.63	22.50		0.00	0.00		444.40	22.50	1.24	
26-Apr-23	94.98	15.00		145.04	15.00		236.51	15.00		0.00	0.00		444.95	15.00	1.24	
27-Apr-23	94.72	15.00		151.67	15.00		237.09	15.00		0.00	0.00		449.53	15.00	1.24	
28-Apr-23	95.55	15.00		148.07	15.00		237.25	15.00		0.00	0.00		452.28	15.00	1.23	
29-Apr-23	95.38	16.50		150.92	16.50		237.45	16.50		0.00	0.00		448.00	16.50	1.24	
30-Apr-23	94.99	24.00		148.55	24.00		234.07	24.00		0.00	0.00		444.58	24.00	1.24	

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Mills PFOA Concentration Summary – June 2023

Date	Well 1 GPM	Hours	PFOA, ng/L	Mills Well 5 GPM	Hours	PFOA, ng/L	Well 7 GPM	Hours	PFOA, ng/L	Well 9 GPM	Hours	PFOA, ng/L	Mills Booster Pump Discharge, GPM	Hours	Calculated PFOA in effluent (forebay), ng/L	Paschall Discharge, GPM	Hours	Sampled PFOA in effluent (Paschall), ng/L	Williams Discharge, GPM	Hours	Sampled PFOA in effluent (Williams), ng/L	Calculated PFOA in effluent (Fairmount and Briggs), ng/L	Sampled PFOA in effluent (Fairmount and Briggs), ng/L
1-Jun-23	95.94	17.00		144.72	17.00		239.39	17.00		0.00	0.00		453.67	17.50	3.84	504.33	17.50		0.00	0.00		1.82	
2-Jun-23	95.48	24.00		148.93	24.00		234.93	24.00		0.00	0.00		445.61	24.00	4.01	500.86	24.00		1291.16	5.50		2.15	
3-Jun-23	95.33	24.00		145.95	24.00		233.67	24.00		0.00	0.00		438.85	24.00	4.05	505.60	24.00		1469.25	2.00		2.01	
4-Jun-23	95.31	24.00		147.71	24.00		232.87	24.00		0.00	0.00		444.13	24.00	4.00	507.79	24.00		0.00	0.00		1.87	
5-Jun-23	95.06	24.00		152.67	24.00		232.67	24.00		0.00	0.00		444.24	24.00	4.03	507.34	24.00		0.00	0.00		1.88	
6-Jun-23	94.82	24.00		155.05	24.00		232.47	24.00		0.00	0.00		444.93	24.00	4.03	503.77	24.00		1499.10	3.50		2.10	
7-Jun-23	94.79	22.50		147.10	22.50		232.21	22.50		0.00	0.00		438.29	22.50	4.04	507.98	22.50		0.00	0.00		1.87	
8-Jun-23	95.37	15.50		149.84	15.50		237.75	15.50		0.00	0.00		448.87	15.50	4.01	499.88	15.50		1526.93	6.00		2.32	
9-Jun-23	95.80	14.00		145.60	14.00		239.31	14.00		0.00	0.00		446.48	14.00	4.02	501.04	14.50		1568.20	6.50		2.35	
10-Jun-23	95.98	14.00		156.65	14.00		239.29	14.00		0.00	0.00		456.30	14.00	4.00	482.66	14.50		1540.77	10.50		2.51	
11-Jun-23	95.82	14.00		144.49	14.00		239.60	14.00		0.00	0.00		445.30	14.00	4.03	490.67	14.50		1556.32	3.00		2.17	
12-Jun-23	95.95	14.00		144.76	14.00		239.86	14.00		0.00	0.00		446.68	14.00	4.02	499.99	14.50		1320.57	6.50		2.30	
13-Jun-23	96.18	14.00		142.63	14.00		240.46	14.00		0.00	0.00		446.29	14.00	4.02	502.06	14.50		1544.09	6.50		2.34	
14-Jun-23	96.18	14.00		143.46	14.00		240.29	14.00		0.00	0.00		444.91	14.00	4.04	500.81	14.50		1545.60	6.50		2.35	
15-Jun-23	96.43	14.00		145.55	14.00		240.29	14.00		0.00	0.00		448.64	14.00	4.02	502.25	14.00		1535.53	10.00		2.49	
16-Jun-23	96.18	14.00		145.83	14.00		240.57	14.00		0.00	0.00		451.79	14.00	3.99	506.51	14.00		1539.89	5.50		2.31	
17-Jun-23	96.34	14.00		144.02	14.00		240.89	14.00		0.00	0.00		446.88	14.00	4.03	506.75	14.00		1522.49	6.50		2.36	
18-Jun-23	95.95	14.00		145.00	14.00		240.49	14.00		0.00	0.00		445.11	14.00	4.04	502.77	14.50		1545.43	7.50		2.39	
19-Jun-23	96.18	14.00		145.14	14.00		241.00	14.00		0.00	0.00		447.66	14.00	4.03	508.00	14.00		1547.02	5.50		2.32	
20-Jun-23	96.16	14.00		139.89	14.00		240.77	14.00		79.95	8.50		489.30	14.00	4.00	494.07	14.50		1517.41	12.00		2.55	
21-Jun-23	97.08	6.00		138.99	6.00		242.73	6.00		95.57	6.00		526.17	6.00	4.05	504.80	6.00		1561.91	10.50		2.74	
22-Jun-23	96.24	17.50		133.42	17.50		240.62	17.50		96.93	17.50		525.33	17.50	4.02	504.45	17.50		852.56	12.50		2.40	
23-Jun-23	95.97	24.00		130.73	24.00		236.07	24.00		94.60	24.00		515.63	24.00	4.03	509.23	24.00		0.00	0.00		2.03	
24-Jun-23	95.78	24.00		132.17	24.00		234.37	24.00		93.68	24.00		513.79	24.00	4.04	502.27	24.00		1481.38	7.00		2.33	
25-Jun-23	95.72	24.00		136.34	24.00		233.82	24.00		91.52	24.00		517.00	24.00	4.01	509.51	24.00		0.00	0.00		2.02	
26-Jun-23	95.62	23.00		139.01	22.50		237.43	23.00		89.92	23.00		521.42	23.00	3.99	508.38	24.00		1472.51	2.00		2.09	
27-Jun-23	95.95	16.00		135.97	16.00		237.40	16.00		98.36	16.00		526.45	16.00	4.01	506.39	16.50		1970.02	8.00		2.49	
28-Jun-23	95.38	24.00	7.30	132.11	24.00	2.60	235.18	24.00	3.00	103.38	24.00	3.50	519.18	24.00	4.06	506.05	24.00	0.00	1477.09	2.50	3.00	2.18	2.50
29-Jun-23	95.94	24.00		132.09	24.00		233.15	24.00		102.87	24.00		511.16	24.00	4.11	506.97	24.00		1508.43	3.50		2.23	
30-Jun-23	95.58	24.00		130.00	24.00		232.57	24.00		99.15	24.00		513.68	24.00	4.05	504.27	24.00		1479.51	3.50		2.21	

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CVWD Mills PFOS Concentration Summary – June 2023

Date	Well 1 GPM	Hours	PFOS, ng/L	Mills Well 5 GPM	Hours	PFOS, ng/L	Well 7 GPM	Hours	PFOS, ng/L	Well 9 GPM	Hours	PFOS, ng/L	Mills Booster Pump Discharge, GPM	Hours	Calculated PFOS in effluent (forebay), ng/L	Paschall Discharge, GPM	Hours	Sampled PFOS in effluent (Paschall), ng/L	Williams Discharge, GPM	Hours	Sampled PFOS in effluent (Williams), ng/L	Sampled PFOS in effluent (Fairmount and Briggs), ng/L	Sampled PFOS in effluent (Fairmount and Briggs), ng/L
1-Jun-23	95.94	17.00		144.72	17.00		239.39	17.00		0.00	0.00		453.67	17.50	1.08	504.33	17.50		0.00	0.00		0.51	
2-Jun-23	95.48	24.00		148.93	24.00		234.93	24.00		0.00	0.00		445.61	24.00	1.13	500.86	24.00		1291.16	5.50		0.86	
3-Jun-23	95.33	24.00		145.95	24.00		233.67	24.00		0.00	0.00		438.85	24.00	1.14	505.60	24.00		1469.25	2.00		0.69	
4-Jun-23	95.31	24.00		147.71	24.00		232.87	24.00		0.00	0.00		444.13	24.00	1.13	507.79	24.00		0.00	0.00		0.53	
5-Jun-23	95.06	24.00		152.67	24.00		232.67	24.00		0.00	0.00		444.24	24.00	1.14	507.34	24.00		0.00	0.00		0.53	
6-Jun-23	94.82	24.00		155.05	24.00		232.47	24.00		0.00	0.00		444.93	24.00	1.14	503.77	24.00		1499.10	3.50		0.79	
7-Jun-23	94.79	22.50		147.10	22.50		232.21	22.50		0.00	0.00		438.29	22.50	1.14	507.98	22.50		0.00	0.00		0.53	
8-Jun-23	95.37	15.50		149.84	15.50		237.75	15.50		0.00	0.00		448.87	15.50	1.13	499.88	15.50		1526.93	6.00		1.06	
9-Jun-23	95.80	14.00		145.60	14.00		239.31	14.00		0.00	0.00		446.48	14.00	1.13	501.04	14.50		1568.20	6.50		1.12	
10-Jun-23	95.98	14.00		156.65	14.00		239.29	14.00		0.00	0.00		456.30	14.00	1.13	482.66	14.50		1540.77	10.50		1.28	
11-Jun-23	95.82	14.00		144.49	14.00		239.60	14.00		0.00	0.00		445.30	14.00	1.13	490.67	14.50		1556.32	3.00		0.88	
12-Jun-23	95.95	14.00		144.76	14.00		239.86	14.00		0.00	0.00		446.68	14.00	1.13	499.99	14.50		1320.57	6.50		1.06	
13-Jun-23	96.18	14.00		142.63	14.00		240.46	14.00		0.00	0.00		446.29	14.00	1.13	502.06	14.50		1544.09	6.50		1.11	
14-Jun-23	96.18	14.00		143.46	14.00		240.29	14.00		0.00	0.00		444.91	14.00	1.13	500.81	14.50		1545.60	6.50		1.11	
15-Jun-23	96.43	14.00		145.55	14.00		240.29	14.00		0.00	0.00		448.64	14.00	1.13	502.25	14.00		1535.53	10.00		1.27	
16-Jun-23	96.18	14.00		145.83	14.00		240.57	14.00		0.00	0.00		451.79	14.00	1.12	506.51	14.00		1539.89	5.50		1.06	
17-Jun-23	96.34	14.00		144.02	14.00		240.89	14.00		0.00	0.00		446.88	14.00	1.13	506.75	14.00		1522.49	6.50		1.11	
18-Jun-23	95.95	14.00		145.00	14.00		240.49	14.00		0.00	0.00		445.11	14.00	1.14	502.77	14.50		1545.43	7.50		1.16	
19-Jun-23	96.18	14.00		145.14	14.00		241.00	14.00		0.00	0.00		447.66	14.00	1.13	508.00	14.00		1547.02	5.50		1.06	
20-Jun-23	96.16	14.00		139.89	14.00		240.77	14.00		79.95	8.50		489.30	14.00	1.12	494.07	14.50		1517.41	12.00		1.31	
21-Jun-23	97.08	6.00		138.99	6.00		242.73	6.00		95.57	6.00		526.17	6.00	1.13	504.80	6.00		1561.91	10.50		1.54	
22-Jun-23	96.24	17.50		133.42	17.50		240.62	17.50		96.93	17.50		525.33	17.50	1.12	504.45	17.50		852.56	12.50		1.06	
23-Jun-23	95.97	24.00		130.73	24.00		236.07	24.00		94.60	24.00		515.63	24.00	1.12	509.23	24.00		0.00	0.00		0.56	
24-Jun-23	95.78	24.00		132.17	24.00		234.37	24.00		93.68	24.00		513.79	24.00	1.12	502.27	24.00		1481.38	7.00		0.96	
25-Jun-23	95.72	24.00		136.34	24.00		233.82	24.00		91.52	24.00		517.00	24.00	1.12	509.51	24.00		0.00	0.00		0.56	
26-Jun-23	95.62	23.00		139.01	22.50		237.43	23.00		89.92	23.00		521.42	23.00	1.11	508.38	24.00		1472.51	2.00		0.70	
27-Jun-23	95.95	16.00		135.97	16.00		237.40	16.00		98.36	16.00		526.45	16.00	1.11	506.39	16.50		1970.02	8.00		1.21	
28-Jun-23	95.38	24.00	1.80	132.11	24.00	0.92	235.18	24.00	0.83	103.38	24.00	0.93	519.18	24.00	1.13	506.05	24.00	0.00	1477.09	2.50	1.90	0.74	1.20
29-Jun-23	95.94	24.00		132.09	24.00		233.15	24.00		102.87	24.00		511.16	24.00	1.14	506.97	24.00		1508.43	3.50		0.81	
30-Jun-23	95.58	24.00		130.00	24.00		232.57	24.00		99.15	24.00		513.68	24.00	1.12	504.27	24.00		1479.51	3.50		0.80	

*Sampling date highlighted in blue.

** All cells in calculated columns are calculated based on same monthly sampling data

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 4
September 8, 2023

To: Engineering and Operations Committee
From: Kellen J. Boyce, Systems & Operations Manager
Subject: Electrical Vehicle Options & Charging Stations

INFORMATION ITEM:

Electrical Vehicle Charging Stations – Discussion on the District’s progress towards fleet electrification.

BACKGROUND:

In early 2023, the California Air Resources Control Board released guidance on the electrification of California fleets in a move to achieve zero emission goals set by the governor with the “*Clean Heavy-Duty Vehicle Replacement Program PA2022-01*”. In order to remain in compliance, CVWD needs to start implementing our existing fleet to electric, alternative, or hybrid fueled vehicles to meet the 2035 deadline. Through this investigation it has been determined the need to invest in Electrical Vehicle (EV) charging stations prior to investing in EVs. With the EV charging stations in place, CVWD will be in a position to implement an EV purchasing program when our best opportunity presents or when additional grant funding becomes available.

DISCUSSION:

Staff began reaching out to various local electrical companies to achieve this goal. Prior to purchasing any EVs, CVWD must construct several new charging stations to power those vehicles.

EV Charging Stations:

- Met with Royal Industrial Wholesales for investigation and vendor options.
- The Team consists of CVWD, Royal Industrial & Energy Solutions Group, Espen Technology Group, and LMS Electric.
- The EV Team has held multiple meetings in attempting to determine legislative order and our options moving forward.
- We have completed site walks & investigation, and bids should be submitted by September 11, 2023.
- This proposal will include time, labor, and materials for one (1) dual charging station at Glenwood Plant and one (1) dual station at CVWD main office.
- The Team has also been reaching out to other utilities locally and throughout California for options and opportunities.

Electric Vehicle options:

- We have been looking for startup companies to collaborate with and larger corporations like GM and Ford.
- EVs will come after EV Charging has been installed and legislation has been determined.

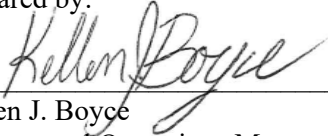
To accomplish this, we will be using our System & Operations SCADA / Electrical Team to lead and oversee the construction and installation of the charging station with engineering support for updating as-builts and generating drawings.

Preliminary Schedule:

Engineering & Operations Meeting
Receive and review proposal

- September 8, 2023
- September 15, 2023

Prepared by:



Kellen J. Boyce
Systems and Operations Manager

Submitted by:



Brook Yared, M.S., P.E.
Interim Director of Engineering & Operations

Attachments: None

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CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 5

September 8, 2023

To: Engineering Committee
From: Brook Yared, M.S., P.E. – Interim Director of Engineering and Operations
Subject: Request for Proposal – Professional Engineering Services for Design of FY 23/24 Pipeline Replacement Project E-1069

INFORMATION ITEM:

Request for Proposal for Professional Engineering Services in Desing of FY 23/24 Pipeline Replacement

Project E-1069 – Discussion on FY 23/24 pipeline replacement capital improvement project E-1069 which includes replacement of pipelines along Montrose Ave (block 2400-2700) and Montrose Ln (block 2200).

BACKGROUND:

Crescenta Valley Water District (CVWD) is embarking on its FY 23/24 capital improvement project program to replace old and undersized steel pipelines within its water distribution system. The District's goal is to maintain a pipeline replacement schedule that will replace all pipelines within a 75-year period. Currently about 50% of CVWD's pipelines will be over 75 years old in the next 20 years. To meet this goal, CVWD would have to replace approximately 50 miles of pipeline before 2045, about 2.3 miles of pipeline annually. The specific pipelines to be replaced per year are based on age of pipeline, pipe size, pipe material and number of previous leaks. The pipelines are also grouped within a specific area of the District for ease of construction.

CVWD's Board approved the FY 23/24 Water Budget in June 2023, and the approved budget showed \$4M available for pipeline replacement as part of the CIP budget. Recently additional funding has been procured, and CVWD will be resuming replacement of approximately 1.0 mile of pipeline for this coming fiscal year and attempting to return to the original pipeline replacement schedule in the future to accommodate for the 75-year replacement schedule. CVWD's Engineering Department in previous years, performed the planning, design, specification development, potholing, trench marking, materials ordering, bidding, community outreach, construction administration, and inspection for pipeline projects.

For CVWD to meet our pipeline replacement schedule, we will need the assistance of a consulting engineering firm to prepare design plans and specifications to replace the existing 10-inch pipelines (as shown in the table below) with approximately 3,800 LF of new 12-inch water main along the 2400-2700 blocks Montrose Avenue and 725 LF of new 6-inch water main along the 2200 block of Montrose Lane. CVWD is planning to advertise and bid this work as one project and complete the project by June 30, 2024.

Block No.	Street Name	Year Const.	Ex. Pipe Dia. (in)	New Pipeline Dia. (in)	Length (L.F.)	Contractor Cost Estimate	Consultant, Materials, Permits, etc.	Total Cost Estimate	Cost/LF
2400-2500	Montrose Ave	1948	10	12	1,850	\$911,400	\$361,400	\$1,272,800	
2600-2700	Montrose Ave	1948	10	12	1,950	\$771,793	\$370,807	\$1,142,600	
2200	Montrose Ln	1933	5	6	725	\$293,700	\$174,400	\$468,100	
	Total				4,525	\$1,976,893	\$906,607	\$2,883,500	\$637

Block 2400-2500 (Montrose Ave between Del Mar Rd and Rosemount Ave) involves replacement of 1850 LF of 10-inch steel main with new 12-inch steel pipe and includes replacing 3 fire hydrants, 30 water service laterals, 1 fire service lateral and 3 gate valves. Block 2600-2700 (Montrose Ave between Rosemount Ave and La Crescenta Ave) involves replacement of 1950 LF of 10-inch steel main with new 12-inch steel pipe and includes replacing 3 fire hydrants, 34 water service laterals, 1 fire service lateral and 3 gate valves.

Montrose Avenue is a high traffic density street in which construction may impact street parking and require traffic control. Block 2400-2500 includes two churches and a combination of single-family and multi-family apartments. Block 2600-2700 includes a preschool, church, Girls Scouts program center, single-family and multi-family homes and fives businesses. Block 2600-2700 additionally requires crossing LACFCD facility Pickens Canyon Channel.

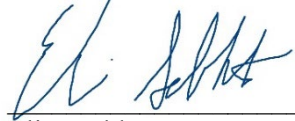
Block 2200 of Montrose Ln is an alleyway located between Ocean View Blvd and Thompson Ct (another alleyway). Directly south of Montrose Ln are businesses while a large parking lot is located directly north. The scope includes replacing existing 5-inch steel pipeline within a concrete alleyway with new 6-inch steel pipe and includes replacement of 10 water laterals and 2 gate valves.

Not included in this proposal is block 3000-3100 of Montrose Avenue. Staff has decided to take on the design in-house as an effort to expediate the process due to the recent major mainline leak that occurred on Friday, August 11, 2023.

DISCUSSION:

On September 1st staff sent out a request for proposal (RFP) to five (5) consulting engineering firms to prepare design plans, specifications and construction services for Project E-1069. Each firm has prior experience with professional services specific to pipeline replacement projects. Attached for your review is the RFP that included the scope of work and other project parameters. On September 7th, staff held a pre-proposal teleconference meeting with the consulting firms and provided information about CVWD, the scope of work and proposed schedule. The proposals are due October 4, 2023.

Prepared by:



Elias Sebhatsu, P.E.
Senior Engineer

Submitted by:



Brook Yared, M.S., P.E.
Interim Director of Engineering & Operations

Attachments:

1. CVWD's Request for Proposals

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REQUEST FOR PROPOSAL

PROFESSIONAL ENGINEERING SERVICES FOR DESIGN OF FY 23/24 PIPELINE REPLACEMENT PROJECT, PROJECT E-1069

PROPOSAL DUE DATE: October 4, 2023

INTRODUCTION:

Crescenta Valley Water District (CVWD) is embarking on its FY 23/24 capital improvement project program, which includes the replacement of old and undersized steel pipelines within the water distribution system. The District's goal is to maintain a pipeline replacement schedule that will replace all pipelines within an 75-year period. Currently about 50% of CVWD's pipelines will be over 75 years old in the next 20 years. To meet this goal, CVWD would have to replace approximately 50 miles of pipeline before 2040, about 1.7 miles of pipeline annually. The specific pipelines to be replaced per year are based on age of pipeline, pipe size, pipe material and number of previous leaks. The pipelines are also grouped within a specific area of the District for ease of construction.

CVWD's Board approved the FY 23/24 Water Budget in June 2023, and the approved budget showed \$4M available for pipeline replacement as part of the CIP budget. Recently additional funding has been procured, and CVWD will be resuming replacement of approximately 1.0 mile of pipeline for this coming fiscal year and attempting to return to the original pipeline replacement schedule in the future to accommodate for the 75-year replacement schedule. CVWD's Engineering Department in previous years, performed the planning, design, specification development, potholing, trench marking, materials ordering, bidding, community outreach, construction administration, and inspection for pipeline projects.

For CVWD to meet our pipeline replacement schedule, we will need the assistance of a consulting engineering firm to prepare design plans and specifications to replace the existing 10-inch pipelines (as shown in the table below) with approximately 3,775 LF of new 12-inch water main along the 2400-2700 blocks Montrose Ave. and 725 LF of new 6-inch water main along the 2200 block of Montrose Ln. CVWD is planning to advertise and bid this work as one project and complete the project by June 30, 2024.

Block No.	Street Name	Year Const.	Ex. Pipe Dia. (in)	New Pipeline Dia. (in)	Length (L.F.)	Contractor Cost Estimate	Consultant, Materials, Permits, etc.	Total Cost Estimate	Cost/LF
2400-2500	Montrose Ave	1948	10	12	1,850	\$911,400	\$361,400	\$1,272,800	
2600-2700	Montrose Ave	1948	10	12	1,950	\$771,793	\$370,807	\$1,142,600	
2200	Montrose Ln	1933	5	6	725	\$293,700	\$174,400	\$468,100	
Total					4,525	\$1,976,893	\$906,607	\$2,883,500	\$637

SCOPE OF WORK

CVWD is seeking a professional engineering firm to design and prepare construction specification documents for the installation of the new pipelines as described above. The major elements of the project include the following:

- Topographic survey and right-of-way mapping
- Utility research and compiling for base map.
- Pothole plan for utility crossing and connection to existing water mains, including permits. Performance of potholing shall be completed by the District.
- Pipeline design (plan view only) per CVWD design and AutoCAD standards.
- Details of connection to existing water mains.
- Design of crossing of Pickens Canyon Channel and submittal of plans for permit approval with Los Angeles County Flood Control
- Coordination with Los Angeles County, Department of Public Works
 - Design requirements relative to pavement replacement, backfill requirements, water discharge BMPs and traffic control.
 - Approval of all fire hydrant locations.
 - Excavation Permit – Submittal and preliminary approval. Contractor will obtain the final permit. CVWD will pay all permit fees.
- If necessary, coordination with State Water Resources Control Board, Division of Drinking Water for variance approval.
- Project Front-end Specifications. Sample provided by CVWD.
- Project Special and Technical Provisions. Sample provided by CVWD.
- List of all materials necessary for project construction.
- Bidding Schedule and Engineer’s construction cost estimate. Bidding coordinated with CVWD.
- Project Schedule for design phase and estimated construction schedule.
- Construction services including:
 - Assistance with response to requests for information.
 - Review of shop drawings and submittals.
 - Construction staking including marking centerline of trench.
- As-built drawing updates per redline information from the Contractor.

Deliverables:

- Prepare 100% submittal and final submittal of construction drawings and specifications.
- Project Meetings - Attendance at least five (5) design and bidding project meeting
 - Kick-off Meeting
 - 50% Submittal for pipeline alignment
 - 100% Submittal
 - Final Submittal
 - Pre-Bid Meeting
 - Pre-Construction Meeting

Project Schedule:

<u>Task</u>	<u>Date</u>
Pre-Proposal Meeting – Web Conference	September 7, 2023
Proposal Due	October 4, 2023
Award of Contract	October 11, 2023
Kick Off Meeting	October 12, 2023
Board Approval – Advertisement for Bids	January 2nd, 2024
Pre-Bid Meeting	January 17, 2024
Bid Opening	January 31, 2024
Board Approval – Award of Contract	February 13, 2024 (Tentative)
Start Construction	February 20, 2024

PROPOSAL REQUIREMENTS:

Scope of Work

The proposal shall include a detailed list itemizing the tasks required to complete the scope of work addressing all project criteria outlined above. Each task shall include a detailed estimate of man-hours required to complete each task.

Proposal Fee Schedule

The proposal shall include a "Fee Schedule" outlining all applicable hourly rates and costs for services. The proposal shall provide a breakdown of fees associated with the project task as specified above. The proposal shall also include a "not-to exceed" total fee, which shall include all work necessary to complete the project objective.

Schedule

The proposal shall include a proposed project schedule detailing the time of completion for design and permitting. The schedule shall include the number of calendar days required to perform each task and the total number of calendar days required to complete the entire project.

Project Experience

The proposal shall include description of comparable pipeline projects completed by consultant including experience working with the City of Glendale and Los Angeles County within past three (3) years including date completed, location of work names, addresses, and phone numbers of persons in charge of project, and the name and address of the public agency or firm for whom the project was constructed.

Consultant's Representative

The proposal shall name a responsible representative, an alternate, and all sub-consultants to perform the assigned tasks. The chosen consultant's representative will remain responsible and in charge of all duties from contract negotiations through project completion. If the primary representative is unable to continue with the project, then the alternate representative will become the primary representative. The District must approve any other changes in responsible representative, in advance. The District will have the right to reject other proposed changes in personnel and may consider any other changes in responsible personnel a breach of contract.

Professional Service Agreement

The chosen consultant shall be responsible for completing the specified services in accordance with the District's standard "Professional Services Agreement," which will be prepared by the District. Services specified in this agreement shall be taken directly from the consultant's accepted proposal and from this "Request for Proposal", if applicable.

Insurance Requirements

The District will require employer's liability, comprehensive commercial liability insurance, and errors and omissions insurance coverage for at least \$2,000,000 and comprehensive automobile liability for at least \$1,000,000. The District requires that the District be named as additional insured on the policy and such insurance policy shall not be terminated or canceled without thirty (30) days prior written notice to the District.

District Reimbursements

The District normally reimburses consultants for the actual cost (plus 15%) for all outside expenses, including those for material costs authorized in advance by the District. Other reasonable expenses will be reimbursed where such costs have been advanced by consultant and approved by the District.

The chosen consultant shall not be compensated for use of computers, office equipment, hardware, or software materials. Said costs are not compensated and time expended by consultant's personnel on such equipment is included within the hourly rate as shown on the consultant's fee schedule.

District Responsibilities:

District will provide the following to assist the selected consultant with the project and its completion:

- Geographic information system (GIS) information and topographic surveys as available.
- Reports, plans, and drawings, as available and pertinent to the proposed plan.
- Design criteria, preferred manufacturer's information, and other technical information, as available and pertinent to the project.
- Current operational condition and performance of existing infrastructure pertinent to the proposed plan.

Proposal Due Date:

Please submit one (1) copy of the proposal as a PDF file via e-mail via e-mail by 12:00 pm by October 4, 2024, to esebhatu@cvwd.com. Send three (3) copies of the proposal to the attention of Mr. Brook Yared, Director of Engineering and Operations at Crescenta Valley Water District, 2700 Foothill Boulevard, La Crescenta CA 91214. If you have any questions or comments, contact Mr. Sebhatu at (818) 236-4117.



LEGEND:

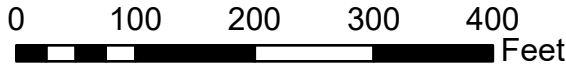
Existing System

- Water Main
- ❖ Hydrant
- Ball Valve
- Butterfly Valve
- Gate Valve

Proposed Construction

- 10-inch Pipeline to be Replaced
- Total Length: 1,850 LF
- Proposed Pipe Diameter: 12-inch
- Material: CMLxCMC 10 ga. Steel

FY 23/24 Pipeline Replacement: Montrose Ave (Block 2400-2500)





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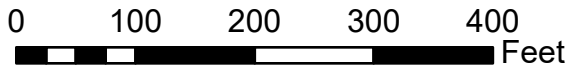
Existing System

- Water Main
- ❖ Hydrant
- Butterfly Valve
- ⊗ Gate Valve
- PRV

Proposed Construction

- 10-inch Pipeline to be Replaced
- Total Length: 1,950 LF
- Proposed Pipe Diameter: 12-inch
- Material: CMLxCMC 10 ga. Steel

FY 23/24 Pipeline Replacement: Montrose Ave (Block 2400-2500)





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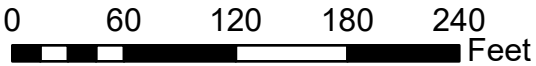
Existing System

- Water Main
- ◆ Hydrant
- Butterfly Valve
- Gate Valve

Proposed Construction

- 5-inch Pipeline to be Replaced
- Total Length: 725 LF
- Proposed Pipe Diameter: 6-inch
- Material: CMLxCMC 10 ga. Steel

FY 23/24 Pipeline Replacement: Montrose Lane (Block 2200)



CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 6
September 8, 2023

To: Engineering Committee
From: Brook Yared, M.S., P.E. – Interim Director of Engineering and Operations
Subject: **Annual Contract for Booster Pump and Well Capital Improvement, Emergency Response, and Maintenance Services**

INFORMATION ITEM:

Annual Contract for Booster Pump and Well Capital Improvement, Emergency Response, and Maintenance Services – Discussion regarding utilizing a General Pump Company (GPC) to provide annual pump and well rehabilitation services, as well as annual pump capital improvement, emergency response, and maintenance services.

BACKGROUND:

CVWD has twelve (12) groundwater wells with pumps and thirty-four (34) booster pumps to access and transport local water supplies from the Verdugo Basin and lower pressure zones to reservoirs in higher-pressure zones, which is necessary to provide water throughout our diverse terrain. As staff prepared the annual Capital Improvement Project (CIP) program, projects are included for the replacement and rehabilitation of at least one well and at least one booster pump per year.

A goal of CVWD's strategic plan is for CVWD to become proactive on pump maintenance instead of being reactive when a pump or motor fails. To meet this goal, in FY 22/23 CVWD partnered with General Pump Company in an annual contract to provide the services described herein, including on-call inspection, analysis, and reporting on all CVWD's wells, pumps, and motors and emergency response services for wells and booster pumps.

DISCUSSION:

Staff has developed a new request for proposals (RFP) for FY 23/24 to renew the annual contract for Booster Pump and Well CIP, Emergency Response and Maintenance services. The RFP details the limits of work for well rehabilitation as well as booster pump maintenance and replacement services, including emergency services and annual pump and motor maintenance. The proposal being requested shall include the following items and contractually guarantee that the work is done in accordance with CVWD's Rules and Regulations and all state and local regulations.

Annual Groundwater Well Rehabilitation:

Staff has developed a detailed standard approach to well rehabilitation that can be used by a pump contractor as part of an annual well rehabilitation program. These projects represent some of the most profitable for the District as they allow the community to access local water supplies stored in the Verdugo Basin. Staff has been investigating ways to improve our daily efficiency with respect to pump maintenance as we focus on our ever-increasing volume of annual pipeline replacements.

In a reactive maintenance approach, a well can fail and remain inactive for months representing a large cost increase as the District will need to source water from imported sources during this downtime. After a well pump has failed, staff requires time to design and resize the pump, publicly advertise for bids, and award a contract that take upwards of two or three (2-3) months before actual work, by a contractor, can begin. Rushed contracting of these critical services also poses a risk of having an underqualified pump contractor win the bid, which can result in delayed construction, poor pump selection due to lack of availability, and/or damage to the well casing.

Having an established Contractor for all planned and emergency work would allow for earlier materials procurement and reduce mobilization time, which reduces the downtime of any of our vital groundwater resources to between two and three (2-3) weeks.

Annual Booster Pump Rehabilitation

Staff has also developed a standard approach to booster pump replacement that a pump contractor could utilize as part of the annual booster pump rehabilitation so staff can focus on the annual pipeline replacement program.

As discussed above, with reactive maintenance there is a period, between two to three (2-3) months, before actual work by a contractor can begin. Therefore, staff is also recommending that we include this task as part of the RFP

so the design work and materials procurement can take place in advance of construction. This will eliminate the time lag between the start of design and mobilization on-site.

Annual Booster Pump Inspection and Maintenance Service

As part of CVWD's strategic plan, staff's objective is to become proactive on pump maintenance. To meet this objective, staff will need the assistance of a pump contractor, to provide annual maintenance and inspection services such as motor maintenance, pump efficiency, and visual inspection of all CVWD's pumps and motors at least once a year. The pump contractor will also be required to provide an inspection report with recommendations that staff can use to prioritize pump and motor replacement or rehabilitation in the following years.

Emergency Pump & Motor Services

Finally, the RFP provides for critical emergency services during a man-made or natural emergency. A contractor must be able to provide emergency services and be responsive to an emergency event within 24 hours. The contract will be based on the agreed upon fee/rate schedule, response time, and availability of materials. Most importantly, it would eliminate the need to seek out an available pump contractor during an emergency.

Pump Contractors:

CVWD has utilized several pump contractors over the years. Some of the issues with pump contractors in the past include: overextension of contracted work, not providing timely service, not having materials on-hand, and failure of critical equipment. Conversely, General Pump Company has provided the best service compared to other contractors, and the last well rehabilitation they performed for CVWD was completed within two (2) months as compared to four to five (4-5) months with other contractors.

In addition, General Pump has demonstrated a high level of expertise with respect to knowledge on pump design and well rehabilitation. They have a large inventory of material and equipment that is dependable and stored locally. Finally, they are among a small group of firms that has engineers and hydrogeologists on staff to assist with testing, analyzing, and designing advanced well rehabilitations and booster pump replacements, including an approach and strategy in the face of unique challenges in the field.

FY 23/24 – CIP Contract Cost Estimate:

Staff reviewed General Pump's fee schedule and estimated the project costs for the rehabilitation of Well 14 and the replacement of motor of Mills Booster A and pump and motor replacement at Mills Booster B, as discussed below.

Well Rehabilitation:

Past well rehabilitation projects for the District, which require large contributions of staff's time, have cost between \$95,000-\$120,000. Based on estimates of General Pump's past fee schedule, staff estimates the cost for the rehabilitation of Well 14 to be around \$150,000. The scope of work for the rehabilitation of Well 14 would include the following:

- Removal of the existing pump and motor assembly
- Pre-rehabilitation CCTV inspection of well casing
- Review inspection data and make rehabilitation recommendations
- Temporary test pumping to perform Constant Rate or Step Drawdown testing
- Procurement of a new pump and motor assembly
- Mechanical development of the well
- Chemical treatment of well casing using acids and dispersants
- Advanced treatment, options of the well casing (i.e., Sonar Jetting, Air Bursting)
- Post-rehabilitation CCTV of well casing
- New pump and motor assembly installation
- Discharge requirements per NPDES best management practices
- Pump startup and testing
- Return well to service: well disinfection and DDW approval
- As built and report submission

Booster Pump Rehabilitation

Booster Pump rehabilitation or replacement does not involve as much rehabilitation work, however booster pumps are generally larger, more expensive, and require a longer lead time to procure. Historically, the average booster pump replacement cost ranges from \$25,000 to \$45,000, depending on the size and capacity of the pump. To upgrade Booster A (VFD motor upgrade only) & B (pump replacement only) at the Mills Facility, staff estimates the cost to be around \$110,000. The scope of work for Booster A & B at the Mills Facility includes the following:

- Assessment of pump failure at the site, if necessary (vibration analysis, power surge)
- Remove pump and motor assembly
- Perform inspection of existing pump and motor for reporting
- Review inspection data and make rehabilitation recommendations

- Assess line shaft and column pipe for refurbishment or replacement
- Procure the new pump & motor assembly plus all necessary column piping or appurtenances
- Install new pump and motor after staff review.
- Start up and testing
- As built and report submission

Annual Booster Pump Inspection and Maintenance Service

Staff reviewed General Pump's rate schedule for providing semi-annual maintenance and inspection services for all CVWD's pumps and motors and provide an inspection report with recommendations based on industry best practices. Staff has estimated the annual cost for pump maintenance and inspection services for FY 23/24 (one inspection per site) to be approximately \$66,000 and will be drawn from Operating Budget under the Booster Pump Maintenance account.

Emergency Pump & Motor Services

Staff reviewed General Pump's rate schedule for providing emergency pump and motor services and estimated the annual cost to be around \$15,000, on an as-needed basis. Any services incurred will be drawn from the Operating Budget under the Emergency Operations account.

SUMMARY & RECOMMENDATION:

Staff put together a preliminary cost estimate for an Annual Contract for Booster Pump and Well Capital Improvement, Emergency Response and Maintenance Services for FY 23/24 at \$341,000 by General Pump (see table below).

Id No.	FY 23/24 Booster Pump and Well Emergency and Maintenance Services	Estimated Annual Cost
1	Well Rehabilitation	\$150,000
2	Booster Pump Rehabilitation	\$110,000
3	Annual Booster Pump Inspection and Maintenance Service (Expense)	\$66,000
4	Emergency Pump & Motor Services (Expense)	\$15,000
	FY 23/24 Total	\$341,000

The actual cost for the proposed work will be determined once a proposal has been submitted.

It is staff's recommendation to solicit a proposal from General Pump Company to provide services to accomplish the work described above. Proposals will be due by the end of the month and brought to the Board of Directors for award of contract in October.

Prepared by:



Elias Sebhata, P.E.
Senior Engineer

Submitted by:



Brook Yared, M.S., P.E.
Interim Director of Engineering & Operations

Attachments:

1. CVWD's Request for Proposals

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FY 23/24
ANNUAL WELL AND PUMP MAINTENANCE
&
EMERGENCY SERVICES

Request for Proposal

Proposal Delivery Due Date:

Wednesday, October 10, 2023

12:00 PM PST

Delivery Address:

Crescenta Valley Water District
2700 Foothill Blvd
La Crescenta, CA 91214
Attention: Brook Yared
Director of Engineering & Operations

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I. INTRODUCTION

Crescenta Valley Water District (CVWD) is seeking construction, maintenance, and professional services for annual Well and Pump Maintenance and Emergency Services as outlined in this RFP.

Crescenta Valley Water District (CVWD or the District) was formed as a "County" Water District in 1950 to provide water and wastewater services to the La Crescenta area (unincorporated Los Angeles County) and portions of Glendale and La Canada Flintridge. CVWD serves water to approximately 32,500 people and has about 8,000 service connections. CVWD's service area covers approximately four (4) square miles in the foothills between Pasadena on the east and Glendale on the south and west. To the north are the San Gabriel Mountains.

CVWD water supply includes local groundwater from the Verdugo Basin and imported water from Foothill Municipal Water District (FMWD). FMWD is a member agency of the Metropolitan Water District of Southern California (MWD).

CVWD's water distribution infrastructure includes 11 pressure zones, approximately 95 miles of pipeline, 13 booster stations with 34 booster pumps, 12 groundwater wells, and 17 storage reservoirs. As a major part in the ongoing effort to maintain a safe, secure, and reliable water service, CVWD performs annual maintenance of its booster pump and well facilities located throughout its service area.

1) CONTACT INFORMATION:

Project Manager:

Mr. Brook Yared, Director of Engineering & Operations
2700 Foothill Blvd
La Crescenta, CA 91214
Email: byared@cvwd.com
Phone: Office (818) 236-4119; Cell (626) 590-1020

Mr. Elias Sebhatu, Senior Engineer
2700 Foothill Blvd
La Crescenta, CA 91214
Email: esebhatu@cvwd.com
Phone: Office (818) 236-4117

Operations:

Mr. Kellen Boyce, Production Manager
3730 Glenwood Ave
La Crescenta, CA 91214
Email: kboyce@cvwd.com
Phone: Office (818) 236-3105; Cell (818) 284-5817

Ms. Darlene Telles, Operations & Maintenance Manager
3730 Glenwood Ave
La Crescenta, CA 91214
Email: dtelles@cvwd.com
Phone: Office (818) 236-4132; Cell (626) 437-8662

Timeline

Request for Proposal Sent:	September 11, 2023
Question Submittal Deadline	September 29, 2023
Proposal Due	October 6, 2023
Award of Contract	October 10, 2023

II. SCOPE OF REHABILITATION AND REPLACEMENT WORK

The work shall include routine and emergency pump pulling and installations, water well rehabilitations, well casing repairs and installations, well abandonments, well video inspections, and/or repair services on various types of pumps on an as-needed basis. The responsibilities of the Contractor under this RFP shall include but are not limited to the following requirements:

The work shall include:

- a) Baseline assessment
- b) Routine and emergency pump and motor removal, inspection, and installation
- c) Water well rehabilitation activities:
 - brushing
 - bailing by pumping
 - chemical treatment
 - mechanical development
 - Start up and testing
- d) Well casing repairs and installations
- e) Static well CCTV inspection & reporting
- f) MCC Power Connection
- g) Repair services on various types of pumps on an as-needed basis.

The results of inspection reports may call for advanced methods of well rehabilitation at times. CVWD will rely on recommendations from the selected Contractor to provide options should any of the following non-standard repair/rehabilitation steps be deemed necessary.

- a) Variable Frequency Drive (VFD) Maintenance
- b) Dynamic well CCTV inspection & reporting
- c) Advanced Well Analysis (Spinner logs, casing analysis)
- d) Advanced Well Rehabilitation recommendations (i.e., sonar jetting, air bursting)
- e) Vibration Analysis
- f) Test/rental pump and motor assembly installation, piping, electrical starter, and removal
- g) Constant Rate and Step Drawdown testing
- h) Well abandonments

See section VII for proposal requirements.

1) TECHNICAL REQUIREMENTS – WELLS

- a) Pump and Motor Removal and Inspection

Contractor shall disconnect all electrical wiring and appurtenances necessary for the pulling of a well pump (maximum 500-feet below ground surface). Contractor shall remove the motor, discharge head, oil tubing or submersible motor cable, shafting, column, bowl assembly, strainer, and airline.

All component parts shall be closely inspected for excessive wear, cracks, holes, corrosion, or any type of damage, which would necessitate any repairs or replacement parts.

Contractor shall sound total well depth from surface and provide a depth to the bottom of the well along with detailed reports of the well inspection.

- b) Well CCTV Inspection

1. Static Video Inspection:

- a. After removal of the pump and upon CVWD's direction, Contractor shall perform well video inspection using color video equipment with side scan.

- b. The Contractor shall furnish all labor, materials and equipment required to provide a color video survey of the well after preparation of the water to produce clear viewing conditions.
- c. If necessary, the Contractor will introduce a polymer type flocculant into the well, followed by water. Contractor will allow water to flow into the well for a 24 to 48-hour time period in advance of the video survey to produce clear viewing conditions.
- d. Should a clear video picture of the internal casing conditions not be achieved, additional clear water preparations shall be instituted, and additional video surveys conducted until a clear video picture record is obtained. This work shall be accomplished at the Contractor's expense.
- e. As the camera probe surveys the full casing interval in the well, a digital depth record shall be recorded on the video survey log for reference. The video camera shall be capable of providing both vertical and horizontal (side) viewing of the entire casing as it descends into the well.
- f. When a successful video survey log has been acquired, one copy in CD/DVD format shall be provided to CVWD. Contractor shall submit a written report to accompany the video survey log, documenting survey date, static water level, perforation depth intervals and conditions, and total well depth.

2. Dynamic Video Inspection

- a. Dynamic Video inspections are performed while the pump is still in operations.
- b. The Contractor is responsible for any damage to the dynamic well CCTV equipment that may occur during inspection of an operating pump.
- c. As the camera probe surveys the full casing interval in the well, a digital depth record shall be recorded on the video survey log for reference. The video camera shall be capable of providing a vertical viewing of the entire casing as it descends into the well.

c) Wire Brushing and Bailing

Wire brushing shall be carried out in such a manner as to clean the existing casing perforations and to remove scale and tubercles attached to the inside wall of the casing. The Contractor shall furnish the appropriate wire brush. If the well casing screen is wire wrapped, then Contractor shall use an approved stiff nylon brush.

The brush barrel shall be not less than 6 inches smaller in diameter than the well casing. The brushing elements inserted into the barrel shall consist of 7/8-inch diameter minimum stiff steel cable adequately spaced to clean the entire well. A minimum of 1500 pounds shall be required to drive the brush down the well.

After sufficient wire brushing, the well will be allowed to sit for a 24-to-48-hour time period and debris in the water column will be allowed to settle to the bottom of the well during this period. Sediment fill shall be removed from the bottom of the well to the maximum extent possible using a bailer or scow or equivalent retrieval device.

The total depth of the well shall be measured shortly following bailing. This operation will be performed only if the casing appears to be in relatively good condition. Should it appear that there is any damaged casing, or any sections of casing appear to be in a state of detachment from the well, the bailing should not be performed.

If bailing is performed, then all bailed material (water and sediment) shall be placed in steel drums or appropriate containers. The sediment, after separation from the water, shall be placed in the containers, properly labeled, and eventually removed from the well site for disposal by the Contractor.

The Contractor will be responsible for manifesting the bailed material for disposal at an appropriate and approved landfill. The District shall be onsite to collect a sample of the bailed material for possible laboratory analysis.

d) Advanced Well Inspection & Rehabilitation

Advanced Inspection: Determining the best approach to the rehabilitation of a well can require advanced inspection methods. This can include spinner logs, dynamic well videos, and vibration analysis.

Advanced Rehabilitation: At times, wells require additional work to restore the screen efficiency or repair damage to the casing. When necessary, the Contractor shall recommend advanced rehabilitation repairs to CVWD before any work is allowed to proceed. After reviewing the rehabilitation method CVWD staff will either approved the recommended work or propose an alternative based on the best available technology at the time.

e) Liner Installation and Gravel Pack

If required, a Roscoe Moss Company well casing liner, or approved equivalent, shall be installed to maximize the flow of groundwater into the well and minimize the movement or formation of sand into the well. Prior to ordering, the Contractor shall collaborate with staff to determine the approximate locations, depth and sizing of the blank and perforated well casing liner.

Casing guides or centralizers shall be welded to the casing at 40-foot intervals starting at the bottom of the well casing and terminating at 60 feet below the pump base. Care shall be taken to ensure that the existing mild steel well casing is not in contact at any point with the stainless well casing or guides.

Completed blank and perforated well casing shall be suspended above the bottom of the hole, by a suspension clamp, a sufficient distance to ensure that casing and screen will not be supported from the bottom. Should damage occur to the blank or perforated well casing during the installation, gravel packing, development, or pumping. The Contractor shall repair the damage.

Welding collars shall have at least the same thickness and the same chemical and physical properties as the corresponding casing section, shall be 4-inches in width, shall be rolled to fit the outside diameter, and shall be welded to the casing section. Longitudinal welds on the plain end shall be ground to plate surface a sufficient distance from the end to allow plain end insertion into the collar. The inside edge of the collars and the outside edge of the adjacent casing length shall be ground or sufficiently smoothed to remove sharp edges or burrs.

If recommended, gravel used as the filter pack material shall be composed of durable, hard, sound, rounded, smooth, and uniform particles containing no clay, loam, mica, shale, silt, organic matter, or deleterious materials. Gravel size and gradation shall tentatively consist of Silica Resources, Inc. 8-12 Blend (6x16 gradation). However, the gravel size and gradation specified are subject to change by the Manufacturer and Contractor following review of the sieve analysis of formation sand entering the existing well. Unless specified otherwise, gravel shall be well graded and shall have a uniformity coefficient (size of sieve that retains 40 percent of sampled divided by size of sieve that retains 90 percent of sample) of 2.0 to 3.0.

During placement of the gravel, liquid sodium hypochlorite (10% solution) shall be added to the gravel at the rate of one gallon for each cubic yard (equivalent to one Super Sack) of gravel installed. Cleaning and consolidation of the gravel pack shall be accomplished by circulation, swabbing, and/or jetting until there is no further settlement of the gravel before proceeding with well construction. After the gravel is installed, a swab shall be carefully worked opposite all perforated sections beginning at the bottom of the perforated section, through the entire length of the perforations. The swab shall be double-flanged and as approved by the Engineer. As the gravel settles, more shall be added.

The quantity of gravel pack material placed in the annulus shall be at least as great as the calculated volume of the annulus (between the existing well casing and the new well casing) based upon the caliper

survey. The Contractor shall supply the devices required to measure the volume of gravel placed in the well.

f) Temporary Test Pump Mobilization/Demobilization

If requested, the Contractor shall furnish, install, and remove a deep-well turbine pump, prime mover, column assembly, and all appurtenances necessary for developing and/or test pumping the well.

The pump and prime mover shall have a capacity and ample range to perform Constant Rate and Step drawdown testing when necessary.

1. The prime mover shall be a variable speed type.
2. Contractor shall furnish all fuel or power required to operate the pumping unit.
3. A temporary 2 to 3-inch I.D. access tube shall be installed during pump installation and will provide access for water level sounders into the well casing during pumping, to measure water levels.
4. The prime mover shall be a variable-speed type with a gear ratio of 1 to 2, in order to overdrive the pump to attain the desired pump rate. The prime mover shall meet all noise regulation requirements during development and subsequent testing operations.
5. Discharge piping shall be provided for the pumping unit and be of sufficient size and length to conduct water according to the Special Provisions in these Specifications.
6. The Contractor shall provide orifices, meters, or other approved devices that will accurately measure the flow rates, in total amount of water pumped (in gallons) and the instantaneous discharge (in gpm).
7. The discharge line shall be provided with suitable equipment for sand testing, such as the Rossum Centrifugal Sand Sampler.

g) Well Abandonment

The minimum procedure for decommissioning a well in an area with a single aquifer is:

1. Assemble all known information about the well. A CCTV inspection of the well is required if one has not been recently performed.
2. Using the known data, develop a work plan to restore, as far as feasible, the controlling geological conditions that existed before the well was constructed. Work plans shall consist of well log, video log, water level, vulnerability to contamination, details or original construction, specifications of materials to be used, cement formulations, placement of material, perforator and pressure sealing method, calculations as to volume of grout required to seal the casing and voids.
3. Complete the well permit application form. File a service request and pay the required fee.
4. Review the work plan with the local Environmental Health inspector and reach an agreement as to the scope of the work.
5. Remove obstructions and contaminants.
6. Fill the casing up to 150 feet below grade with at least a six-sack fine sand mix. Used drilling mud or drill cuttings are not acceptable. Perforate the casing from 150 feet up to the bottom of the annular seal, if any. Pressure grout (20-40 psi) with neat cement from 150 feet up 4 feet below grade. Pressure shall be maintained for a length of time sufficient for the cementing mixture to set. Cut the casing at 5 ft. and mushroom a cap over the casing. Cover

with fill material up to grade. If the developer needs to cut the casing deeper than 4 feet, OSHA requirements shall be considered.

7. The placement of all materials shall prevent free fall, dilution, and/or separation of aggregates from cementing materials by pumping through a tremie tube.
8. As a rule of thumb, divide the diameter of the casing by 2 to get the minimum number of perforations required per round per foot.
9. Verify that the volume of material placed in the well at least equals the volume of the hole.
10. Arrange for an appointment with the local environmental health inspector to witness the placement of the annular seal.
11. Submit a copy of the well completion report including as-built and pump curve to CVWD's Engineering Department.

Dry holes or exploratory borings are to be destroyed by the placement of approved fill up to a maximum of 50 feet below ground surface. The upper 50 feet is to be sealed using neat cement pumped from the bottom up through a tremie tube. Approved fill material is defined as any inert material equal or finer than native material such as cement, sand-cement grout, concrete, clay, silt or sand. Used drilling mud and drill cuttings are not acceptable.

h) Groundwater Well Pump and Motor Assembly Installation:

Contractor shall furnish all incidental materials to bring the project to a satisfactory completion. Whenever possible, pumps shall be manufactured by Hydroflo, Goulds, or Flowserve or an approved equal.

After completion of any necessary well repairs or rehabilitation work, the Contractor shall reinstall the bowl assembly, column, shafting, oil tubing or submersible motor cable, airline, level transducer, discharge head, and motor, making all joints and connections in a workmanlike manner.

All materials and rehabilitation processes recommended must be National Sanitation Foundation approved and/or certified by the National Groundwater Association and/or American Ground Water Trust. Maintaining these practices and materials standards does not waive final approval of all rehabilitation processes by CVWD.

CVWD will chlorinate the well in accordance with DDW regulations when Contractor has completed the rehabilitation and pass series sampling before the Well is allowed to be returned to service.

The Contractor shall coordinate with CVWD to ensure that all discharges associated with the rehabilitation of the well, at all steps of the project, meet NPDES permit requirements and shall bear the cost for all discharges not in compliance with and/or exceeding the discharge limitations of the NPDES permit.

i) Well Rehabilitation Project Completion

Prior to official completion of a well rehabilitation project, CVWD will provide the Contractor with the results of the passing set of water quality series samples. After all sampling has been complete and the Well is approved by CVWD to be returned to service, the contractor shall submit a letter summarizing the rehabilitation steps taken to improve the well. CVWD will provide this letter and the final passing series sample to DDW.

The Contractor is also required to provide a well casing profile update, pump and motor as-builts summarizing the location of the pump in the well and the pertinent pump and motor information, and all pump and motor performance documentation to the satisfaction of CVWD.

2) TECHNICAL REQUIREMENTS - BOOSTER PUMPS:

a) Removal of Existing Booster Pump

Before the booster pump is removed from the pump can the Contractor is responsible for coordinating with CVWD's water Production Manager and disconnecting all power from the booster pump in coordination.

1. Pump Pulling and Inspection

- a. Contractor shall disconnect all electrical wiring and appurtenances necessary for removal of the booster.
- b. Remove the unit and inspect all component parts for excessive wear, cracks, corrosion, or any type of damage, which would necessitate any repairs, or replacement parts.
- c. Send a completed pump inspection report to CVWD including recommendations for repair.

2. Mobilization and Demobilization

The Contractor shall load, transport and unload pumping unit and all the miscellaneous pulled equipment from jobsite to Contractor's yard and back again to the job site upon repair or arrival of the replacement. The cost of freight, transportation and any associated taxes shall be included in the Contractors proposal ahead of the work being approved.

b) Removal of Existing Booster Pump

After completion of any necessary well repairs or rehabilitation work, the Contractor shall reinstall the bowl assembly, column, shafting, oil tubing or submersible motor cable, airline, level transducer, discharge head, and motor, making all joints and connections in a workmanlike manner.

Contractor shall furnish all incidental materials to bring the project to a satisfactory completion. Pumps shall be manufactured from Hydroflo, Goulds, Flowserve or approved equal.

Prior to installation, Contractor shall adequately disinfect the pump assembly, discharge head and column pipe assembly. After installation, Contractor shall test for rotation and operation of the completed installation to the satisfaction of CVWD.

Contractor shall move back onto the booster station site and shall reinstall the pump and motor, electrical connections, making all joints and connections in a workmanlike manner. Contractor shall restart the motor to make sure it is operating properly.

c) Booster Pump Repairs

The Contractor shall accomplish any repairs or replacements authorized by CVWD in accordance with one of the following:

1. Utilization of Contractor's own labor and equipment in accordance with Bidder's Proposal.
2. The securing of materials and/or outside services. Materials and outside services shall be paid for at actual invoice plus percentage mark-up in Bidder's Proposal.
3. Any suitable combination of the above.

CVWD reserves the right to have any necessary repairs and/or replacement parts furnished by others. At the discretion of the Director of Engineering and Operations, the Contractor's crew may be required to leave the job site until the necessary repairs are accomplished and/or replacement parts are procured.

d) New Electrical Motor

Unless otherwise agreed upon, any booster pump and motor assembly work will require the installation of a new, high efficiency motor. The motor shall be for continuous duty on 220/440 volts, 60 Hz, 3 phase alternating current. The motor shall be form wound utilizing a Class F winding system. The motor shall

be equipped with a seal, located at the top of the motor where its shaft extends through the motor housing; to isolate the well water from the oil filled motor housing.

The motor shall be filled with a high dielectric strength mineral oil and the oil shall be positively circulated throughout the motor for cooling, the rotor, stator windings and bearings. Bronze sleeve bearings shall be provided at each end of the rotor and a pivot shoe type thrust bearing shall carry the weight of all rotating parts and the hydraulic thrust of the pump. The thrust bearings must be bearings capable of continuous operation at shut off head, as well as sustained operation in an up thrust condition.

III. WELL AND BOOSTER PREVENTATIVE MAINTENANCE SERVICES

1) BASELINE ASSESSMENT

- a) Review of District Practices
- b) Review of Existing pump and well infrastructure records
- c) Calculations of wire to water efficiency of pump and motor assemblies while they are in service
- d) Perform Maintenance per manufacturers recommendation
 - i. Make sure machines are properly shutdown before performing your maintenance and/or systems check. Proper isolation is important not only for electrical systems, but for hydraulic systems as well.

2) MECHANICAL INSPECTION

- a) Check that mounting points are secure
- b) Inspect the mechanical seal or packing gland
 - i. Perform packing gland maintenance
- a) Inspect the pump flanges for leaks
- b) Inspect the couplings
- c) Inspect and clean filters

3) LUBRICATION

Lubricate the motor and pump bearing per manufacturer's guidelines. Be sure not to over lubricate. More bearing damage occurs as a result of over greasing than under greasing. If the bearing has a vent cap, remove the cap and run the pump for 30 minutes before reinstalling cap. This will allow excess grease to work its way out of the bearing.

4) ELECTRICAL/MOTOR INSPECTION

- a) Check that all terminations are tight
- b) Inspect motor vents and windings for dust/dirt build-up and clean according to manufacturer's guidelines
- c) Inspect starter/contractor for arcing, overheating, etc.
- d) Use a megohmmeter on the windings to check for insulation failure

5) REPLACE DAMAGED SEALS, PACKING GLANDS AND HOSES

If any hoses, seals, or O-rings show wear or damage, replace immediately. Using a temporary rubber assembly lubricant will ensure a tight fit and prevent leaks or slips.

6) STAFF TRAINING

CVWD may require additional knowledge and skill on the part of its regular employees, such employees shall be given the opportunity to study, practice, and train alongside the Contractor's staff while work is being performed to acquire the knowledge and skill necessary to accomplish routine and advanced maintenance tasks.

IV. ON CALL EMERGENCY SERVICES

1) FIRM COMMITMENT OF AVAILABILITY OF SERVICE

Once a proposal is accepted, a Contractor is expected to maintain an availability of service as set forth in its proposal for at least four months after date of being awarded this annual contract. Under emergency circumstances, the District may request emergency services. In the event of such request, the contractor shall mobilize within 24 hours or less to perform the required task.

In the event of any emergency constituting an immediate hazard to health, safety, property, or licensees, when caused by Work of the Contractor not in accordance with the Contract requirements, the District may undertake at Contractor's expense, and without prior notice, all Work necessary to correct such condition.

All work performed responding to an emergency will be paid on a time and material basis at the rates established in the Rate Sheet provided by the Contractor as part of their proposal.

2) RATE SHEET SUBMITTAL

Emergency work will be paid on a time and material basis. The Contractor shall submit their rate sheet for equipment and personnel along with their contractor license and insurance information to CVWD along with the finalized agreement for the work under this contract. All emergency work will be paid for on a time and material basis utilizing the information provided in the submitted rate sheet.

V. NPDES DISCHARGE REQUIREMENTS

It is the Contractor's responsibility to comply with local NPDES requirements and attain any necessary permits for discharges related to wells being removed from or returned to service. All the well wastewater generated as part of this annual contract shall be disposed of by the Contractor in compliance with all applicable State and Federal laws. The Contractor shall request approval by the Director of Engineering and Operations as to the location and estimated volume of the disposal prior to the discharge. The Contractor shall be responsible for monitoring, treating, testing, and disposing of the wastewater.

The Contractor shall be responsible for implementing a storm water pollution plan and to utilize best management practices (BMP) when de-watering the pipeline, flushing the pipeline, de-watering the trench and any other operation that discharges water to the storm drain. The best management practices required to be used by the Contractor shall be as follows:

- a) Contractor shall not be allowed to wash down A.C. saw cuttings into the storm drain. Contractor shall vacuum and dispose of A.C. saw cuttings to an approved location.
- b) Contractor shall install and maintain sandbag de-silting basins around each catch basin in the construction area. Contractor shall be required to remove trapped sediment to an approved location a minimum of once a week or sooner if flow is impeded.
- c) Contractor shall de-chlorinate with sodium thiosulfate any chlorinated water that is discharged from the pipelines during the entire construction period.
- d) Contractor shall regularly sweep the construction area to prevent dirt and rocks from entering the storm drain system.

VI. MAINTENANCE RECORD KEEPING

Contractor shall prepare, maintain, and preserve all reports and records that may be required by federal, state, and district rules and ordinances related to services provided under this Agreement. Contractor shall maintain records for a period of at least 3 years after receipt of final payment under this Agreement.

CVWD shall have the right to examine, monitor and audit all records, documents, conditions, and activities of the Contractor and its subcontractors related to services under this Agreement. Pursuant to

Government Code Section 8546.7, if this Agreement involves the expenditure of public funds in excess of \$10,000, the Parties to this Agreement may be subject, at the request of the district or as part of any audit of the District, to the examination and audit of a third party Auditor pertaining to matters connected with the performance of this Agreement for a period of three years after final payment under the Agreement.

VII. GENERAL CONTRACT REQUIREMENTS

1) HOURS OF LABOR

Contractor shall forfeit as a penalty to Owner the maximum amount provided by statute for each worker employed in the execution of the contract by the Contractor or any of their subcontractors for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of the Labor Code and, in particular, Section 1810 to Section 1815 thereof, inclusive, except that work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one week shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay as provided in Section 1815.

2) APPROVAL OF SCOPE OF WORK

The Contractor shall submit a scope of work, including a cost estimate for performance, to the District, in writing. District staff will review the scope of work and respond, in writing, in regard to any changes in scope. The Contractor shall do and perform such work and furnish such materials and equipment. Such labor, materials, and/or equipment shall be ordered in writing before such work is started. No work shall be paid for unless ordered in writing.

The District's Representative may order minor changes in the Work not involving an increase or decrease in the contract amount, not involving a change in the time for completion, and not inconsistent with the purposes for which the Work is being constructed. If the Contractor believes that any order for minor changes in the Work involves changes in the contract amount or time for completion, they shall not proceed with the minor changes so ordered and shall within seven (7) days of the receipt of such order notify the Owner's Representative in writing of their estimate of the changes in the contract amount and time for completion they believe to be appropriate.

3) PREVAILING WAGE

The Contractor shall comply with Labor Code Section 1775. In accordance with said Section 1775, the Contractor shall forfeit as a penalty to the Owner, a penalty of up to \$200 per day per worker, in such amount as the Labor Commissioner shall determine for each calendar day or portion thereof for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed for any work done under the contract by them or by any subcontractor under them in violation of the provisions of the Labor Code and, in particular, Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor. Moreover, failure to pay the prevailing wage may subject the Contractor to debarment, as provided in Labor Code Section 1777.1.

Failure to pay workers at the appropriate overtime rate for work of more than 8 hours per day or 40 hours per week, shall incur a penalty pursuant to Labor Code Section 1813 of \$25 per day per worker.

4) CONTRACTOR'S RESPONSIBILITY FOR THE WORK

Until the acceptance of the Work, the Contractor shall have the responsible charge and care of the Work and of the materials to be used therein (including materials for which partial payment has been made or materials which have been furnished by the Owner) and shall bear the risk of injury, loss, or damage to

any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the Work.

The Contractor shall rebuild, repair, restore, and make good all damage to any portion of the Work or the materials occasioned by any cause before its completion and acceptance and shall bear the expense thereof. Where necessary to protect the Work or materials from damage, the Contractor shall, at their expense, provide suitable drainage and erect such temporary structures as are necessary to protect the Work or materials from damage. The suspension of the Work or the granting of an extension of time from any cause whatever shall not relieve the Contractor of the responsibility for the Work and materials as herein specified.

In an emergency affecting the safety of life or property, including adjoining property, the Contractor, without special instructions or authorizations, is authorized to act at their discretion to prevent such threatened loss or injury.

5) INSPECTION AND TESTS OF MATERIALS

A. Readiness for Inspection

The Contractor shall furnish the Owner full information as to the progress of the work in its various parts and shall give the Owner timely notice of the Contractor's readiness for inspection. When practicable, inspection will be made during the manufacture of articles. The Contractor shall furnish, without additional charge, all reasonable facilities and assistance for the safe and convenient inspection and tests required by the Owner.

B. Final Inspection and Acceptance

Final inspections and acceptance of the articles or materials may be made after delivery at the work site at the Owner's expense. In the event that any material at the work site is rejected on account of failure to pass the inspection or test, the Contractor shall replace same promptly. Final inspection will be made as promptly as practicable but may not in all cases be made prior to erection or final assembly.

C. Right to Reject Articles and/or Materials

The Owner shall have the right at all times and places to reject articles and/or materials to be furnished hereunder which in any respect fail to meet the requirements of the specifications, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the work at the site.

If the inspector, through an oversight or otherwise, has accepted material or work which is defective or which is contrary to the specifications, such materials, no matter in what state or condition of manufacture, delivery or erection, may be rejected by the Owner.

Compliance with the specifications is distinctly a duty of the Contractor and shall not be avoided by act or omission on the part of the Owner's inspector.

6) SUB-CONTRACTING

The Contractor may utilize the services of specialty sub-contractors on those parts of the work that, under normal contracting practices, are performed by specialty sub-contractors. Unless a specific sub-contractor is listed by Contractor, Contractor is representing to District that Contractor has all appropriate licenses, certifications, and registrations to perform the work hereunder. After submission of his/her proposal, the Contractor shall not award work to any unlisted subcontractor(s) without prior written approval of the District. The Contractor shall be fully responsible to the District for the performance of his/her sub-contractors and of persons either directly or indirectly employed by them.

7) TAXES

The Contractor shall pay all sales, consumer, use, and other taxes.

8) CLAIMS

As provided in Public Contract Code Sections 20104, et seq., claims by the Contractor shall be in writing and include the documents necessary to substantiate the claim. Prior to submitting a claim under this Section 3-9, the Contractor shall comply with all applicable notification requirements under the Contract Documents. All claims must be filed with the Owner on or before the date of final payment.

For claims of less than fifty thousand dollars (\$50,000.00), the Owner shall respond in writing to any written claim within forty-five (45) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim any additional documentation supporting the claim or relating to defenses to the claims the Owner may have against the Contractor. The Owner's written response to the claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

For Claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the Owner shall respond in writing to all written claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner may have against the Contractor. The Owner's written response to the claim shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or request documentation, whichever is greater.

If the Contractor disputes the Owner's written response, or the Owner fails to respond within the time prescribed, the Contractor may so notify the Owner, in writing, either within fifteen (15) days of receipt of the Owner's response or within fifteen (15) days of the Owner's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the Owner shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute. Submittal

9) PROTESTS

If the Contractor considers any work required by the Owner to be outside the requirements of the Contract Documents, or if the Contractor considers any record or ruling of the Owner, the Owner's Representative or any governmental inspector to be unfair, the Contractor shall immediately upon such work being demanded or such record or ruling being made, ask for written instructions or decision, and within ten (10) days after receipt thereof file a written protest with the Owner, setting forth each objection and the reasons therefor. The Contractor shall, whether or not a written protest will be filed, immediately upon receipt of written instructions or decision proceed without delay to perform the work or conform to the record or ruling. The Contractor hereby agrees that, unless a specific objection or protest has been made as provided herein, the Contractor waives all grounds for protests or objections to the records, rulings, instructions, or decisions of the Owner or the Owner's Representative, and further agrees that as to all matters not included in such objections or protests the records, instructions and decisions of the Owner or Owner's Representative shall be final and conclusive. Such protests shall proceed in accordance with the procedures set forth in Section 3-9 entitled CLAIMS.

10) QUALITY AND SAFETY OF MATERIALS AND EQUIPMENT

All equipment, materials, and supplies to be incorporated in the Work shall be new, unless otherwise specified. All equipment, materials, and supplies shall be produced in a good and workmanlike manner. When the quality of a material, process, or article is not specifically set forth in the plans and specifications, the best available quality of the material, process, or article shall be provided.

Whenever any material, process, or article is indicated or specified by grade, patent or proprietary name, or by name of manufacturer, such specification is for the purpose of facilitating description of the

materials, process, or articles desired and the Contractor may offer any material, process, or article which shall be substantially equal or better in every respect to that indicated or specified; provided, however, that if the material, process, or article offered by the Contractor is not, in the sole discretion of the Owner, equal or better in every respect to that specified, then the Contractor must furnish the material, process, or article specified or one that in the sole discretion of the Owner is the substantial equal or better in every respect. If the Contractor-furnished material, process, or article is more expensive than that specified, or involves additional labor or other cost, then such difference in cost shall be borne by the Contractor.

In accord with Section 3400 of the Public Contract Code, the Contractor shall submit data substantiating requests for substitution of "equal" items within thirty (30) days after award of the contract. This 30-day period is included in number of days allowed for completion of Work.

11) SAFETY AND PUBLIC CONVENIENCE

The Contractor shall conduct their operations to avoid injury or damage to any person or property, and to minimize any obstruction and inconvenience to the public. The Contractor shall comply with the requirements of the Contract Documents relating to safety measures applicable in particular operations or kinds of work. The Contractor shall have under construction no greater amount of Work than can be prosecuted properly with due regard to the rights and safety of the public and the workers.

In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the Work, and the Contractor shall fully comply with all state, federal and other laws, rules, regulations, and orders relating to safety of the public and workers, including State of California, Division of Industrial Safety (Cal/OSHA) regulations. Safety precautions as applicable shall include, but not be limited to, adequate life protection and lifesaving equipment; adequate illumination for underground and night operations; instructions in accident prevention for all employees such as machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accident or injuries; and adequate facilities for the proper inspection and maintenance of all safety measures.

The names and telephone numbers of at least two medical doctors practicing in the vicinity and the telephone number of the local ambulance service shall be prominently displayed adjacent to telephones.

The right of the Engineer or the Owner's Representative to conduct construction review or observation of the Contractor's performance will not include review or observation of the adequacy of the Contractor's safety measures in, on, or near the site of the Work. However, in the event that the Owner determines that the Contractor has failed to ensure the safety of the public and the workers or has failed to take reasonable steps to protect the workers and the public, the Owner may give the Contractor 72-hours written notice to take appropriate action to ensure their safety. In the event the Contractor fails to comply, and the Owner takes such steps as are reasonably necessary to ensure the safety and protection of the public and the workers, the Contractor shall pay the cost and expenses incurred in taking such action.

12) NON-COLLUSION AFFIDAVITS

In accordance with the provisions of Section 7106 of the Public Contract Code, each bidder shall execute and submit with their bid a Non-Collusion Affidavit in the form attached to the Proposal. Additionally, the principal contractor shall secure from each proposed subcontractor a Non-Collusion Affidavit in the form attached to the Proposal.

VIII. PROPOSAL REQUIREMENTS

1) ANNUAL SCOPE OF NON-EMERGENCY SERVICES, FY 23/24

Under this current contract CVWD plans to rehabilitate one of its production wells, Well 14, and intends to perform the planned replacement of Booster A and Booster B at the Mills WTP with the standard SOWs presented here. Please submit a scope of work and cost estimate as part of the response to this request for proposal.

Familiarity with Work: By executing this Agreement, Contractor represents that: (1) it has investigated the work to be performed; (2) it has investigated the site of the work and is aware of all conditions there; and (3) it understands the difficulties and restrictions of the work under this Agreement. Should Contractor discover any conditions materially differing from those inherent in the work or as represented by District, it shall immediately inform District and shall not proceed, except at Contractor's risk, until written instructions or submittal approvals are provided by District.

Well 14: A well log and as built have been included with this year's annual maintenance. Please submit a proposal detailing the work to be performed and provide a quote for the performance of said work.

Booster A & B at Mills WTP: An as built has been included with this year's annual maintenance. Please submit a proposal detailing the work to be performed and provide a quote for the performance of said work. Mills Booster A scope of work is limited to upgrading the existing motor to a VFD while Mills Booster B scope of work will be limited to a pump replacement.

2) ADDITIONAL WELL REHABILITATION PROPOSALS

For all proposed rehabilitation work the Contractor shall submit a written report to CVWD stating the total well depth, current water level, general condition of component parts, and recommendations for repairs and/or replacements from the options provided above.

This report shall contain an itemized labor and material cost estimate of any necessary repairs to the well casing, well pump, electrical wiring, and any app and a proposed schedule for the completion of the work.

3) ADDITIONAL BOOSTER PUMP REPAIR/REHABILITATION PROPOSAL

Contractor shall submit a written proposal to CVWD stating the general condition of component parts, recommendations for repairs and for replacements, and the advisability of pump rehabilitation.

This proposal shall contain an itemized labor and material cost estimate of any necessary repairs to, or replacement of, any of the component parts, and a proposed schedule for the completion of the work.

4) REQUIRED STATEMENTS

A statement that all charges for services will be a "Not-To-Exceed" fee, as submitted with and made part of said contractor's cost proposal.

A copy of the contractor's hourly rate schedule and a written statement that states hourly rate schedule is part of the contractor's cost proposal for use in invoicing for progress payments and for extra work incurred that is not part of this RFP.

A written statement by the contractor that all federal laws and regulations shall be adhered to notwithstanding any state or local laws and regulations. In case of conflict between federal, state, or local laws or regulations, the strictest shall be adhered to.

A written statement by the contractor shall allow all authorized federal, state, county, and City officials access to place of work, books, documents, papers, fiscal, payroll materials, and other relevant contract records pertinent to this project. All relevant records shall be retained for at least three (3) years.

A sample of record keeping practices for both wells and booster pumps.

Provide at least three (3) references, past and present, using the same service being proposed and indicate the scope of work, date, and the name, email address, and telephone number of the client contact. Also, provide a complete list of other municipalities in California utilizing your services over the past five (5) years.

A current California contractor class “A” license and a current California C-57 license shall be included with proposal submittal. Include any other licenses as appropriate.

A written statement that the contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

A written statement that the contractor shall comply with the California Labor Code pursuant to said regulations entitled: Federal Labor Standards provisions; Federal Prevailing Wage Decision; and State of California Prevailing Wage Rates, respectively.

A written statement that the contractor shall comply with the Copeland Anti-kickback Act (18 USC 874 C) and the implementation regulation (29 CFR 3) issued pursuant thereto, and any amendments thereof.

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 7

September 8, 2023

To: Engineering and Operations Committee
From: Brook Yared, M.S., P.E. – Interim Director of Engineering & Operations
Subject: Status Update - FY 22/23 Capital Improvement Project Budget

DISCUSSION:

The following is a status and budget update of the FY 22/23 Capital Improvement Program.

1. 2600 & 2700 Block of Orange & 5000 Block of El Adobe (E-1046)

- a. Construction began June in 2022
- b. Construction completion by early October

FY 2022/23 CIP Program Cost Update: 6/30/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 6/30/23</i>	Projected FY 23/34
<i>2600 & 2700 Block of Orange & 5000 Block of El Adobe - 2700 LF</i>	E-1046	\$ 1,748	\$ 1,350,050	\$ 392,301	\$ 979,700

2. Transfer of Services to Glendale Water and Power (E-1051)

- a. Transfer of Services on Frederick and Thelma to Glendale Water and Power to avoid capital replacement.
- b. Work is planned to begin with Glendale in October 2023.

3. Steel Reservoir Rehabilitation

- a. Edmund No. 2 (E-1036)
 - i. Warranty Inspection Complete
 - ii. Cathodic Protection Activated
 - iii. Scheduling Warranty Repairs
- b. Goss Canyon No. 1 (E-1053)
 - i. Pending Final PPE and Retention
 - ii. Rehabilitation Complete July 7, 2023
 - iii. Performing required sampling before returning to service

FY 2022/23 CIP Program Cost Update: 6/30/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 6/30/23</i>
<i>Edmund #2 - Reservoir Rehabilitation</i>	E-1036	\$ 688,900	\$ 53,772	\$ 3,200
<i>Goss Canyon #1 - Reservoir Rehabilitation</i>	E-1053	\$ -	\$ 800,000	\$ 502,885

4. Replacement of SCADA Equipment, Programming & Integration (E-939)

- a. Project Schedule – April 2022 to January 2024
- b. APEX – Programming & Integration
 - i. Sites Completed – Wells 5, 7, 8, 9, 11, 14 & 16
 - ii. Ramsdell Mixing Station & Glendale/CVWD Interconnection
 - iii. Encinal Reservoir
 - iv. Glenwood Plant with Wells 6, 10, 12 & 15
 - v. Mills Plant with Well 1
- c. Sites Pending Integration (2023)
 - i. Paschall Booster Station

- ii. Rosemont Reservoir
- iii. Assisting with Chloramine Conversion Control Strategy Implementation
- iv. Implementing controls for Well 2 permit revision
- d. Radio Communication Upgrade – Moved to FY 23/24

FY 2022/23 CIP Program Cost Update: 6/30/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 6/30/23</i>
<i>Communication Radio Network</i>	E-1025	\$ 17,610	\$ 50,000	\$ -
<i>SCADA Replacement - Installation</i>	E-939		\$ 395,000	\$ 274,566

5. AMI – Installation of ¾” & 1” meters (E-1035)

- a. Purchasing Materials for Zones 9, 10 & 11
- b. Currently 228 customers are waiting to be configured for the Customer Engagement Platform
- c. 211 are active on the Customer Engagement Platform
- d. Approximately 7110 radios and lids to install/replace
- e. 160, ¾ & 1-inch meters including laterals to replace

6. AMI – Installation of 3” & 4” meters (E-1031) – USBR Grant

- a. Install and connect 32 – 3” & 4” meters – Construction complete by August 2023
- b. 1-1/2-inch meter installation – Grant awarded in late 22/23, construction deferred to FY 23/24

FY 2022/23 CIP Program Cost Update: 6/30/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 6/30/23</i>
<i>AMI - Communication</i>	E-1020	\$ 111,847	\$ -	\$ 29,700
<i>GRANT - 3” & 4” Smart Meters</i>	E-1031	\$ 58,122	\$ 144,000	\$ 16,343
<i>AMI - Meter Lids - Zones 9, 10 & 11</i>	E-1035	\$ -	\$ 220,000	\$ 148,285
<i>GRANT - 1-1/2” Smart Meters - USBR Grant</i>	E-1041	\$ 1,664	\$ 335,000	\$ -

7. Conversion of Disinfection System to Chloramines (E-1052)

- a. Proposal Received from Water Quality and Treatment Solutions – \$83,980

FY 2022/23 CIP Program Cost Update: 6/30/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 6/30/23</i>
<i>Conversion to Chloramination</i>	E-995/ E-1052	\$ -	\$ 100,000	\$ 29,590

8. Grant Funding Opportunities

a. FEMA Local Hazard Mitigation Plan (M-1004)

- i. Project 1 – New emergency electrical generators at 5 sites - Deferred pending Grant availability.
- ii. Project 2 – Seismic Evaluation of CVWD’s facilities application – Deferred pending Grant availability.
- iii. Carl Moyer Grant – New Dump Truck, pending response from SCAQMD
- iv. Water Recycling Grant – Application Submitted July 10, 2023

9. New Pressure Reducing Station & Rehabilitation of the Ramsdell Mixing Station (E-977)

- a. Hydraulic Modeling Review Complete
- b. Installation of two fire hydrants to provide additional bypass options to Zone 1 – FY 23/24

FY 2022/23 CIP Program Cost Update: 3/1/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 6/30/23</i>
<i>Upgrade - Ramsdell Mixing Station</i>	E-977	\$ 48,594	\$ 49,310	\$ 7,645

10. Well 2

- a. Developing permit amendment for a bypass option to avoid repairs to the Biological Nitrate Removal Facility. PFAS issue discussion.

11. Well 9 Rehabilitation

- a. Complete, back in operation

12. Well 14 Failure

- a. Work performed under 22/23 Emergency Services
- b. Rehabilitation of Well 14 was budgeted for FY 23/24

13. Paschall Booster B

- a. Cooling Sleeve detached causing premature failure.
- b. Rental Pump being Order to increase well production from Wells 1, 7, & 9

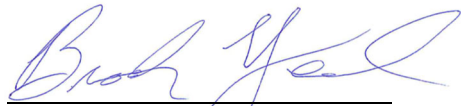
14. Wastewater Master Plan

- a. GIS and Wastewater model demonstration – August 23, 2023, Final submission received
- b. QA/QC in progress

SUMMARY:

Staff will develop on going CIP updates for FY 23/24 starting in October after Q1 of the fiscal year ends.

Prepared & submitted by:



Brook Yared, M.S., P.E.

Interim Director of Engineering & Operations

Attachments: None

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