

# Hexavalent Chromium Treatment at California Water Service Company – Dixon

Prepared by State Water Resources Control Board, Division of Drinking Water, San Francisco District Office. February 8, 2022.

Type of treatment: Strong base anion exchange (SBA-IX).

## 1. Size of footprint of treatment plant

Well 01-03

Note: this site is shared with other utilities.

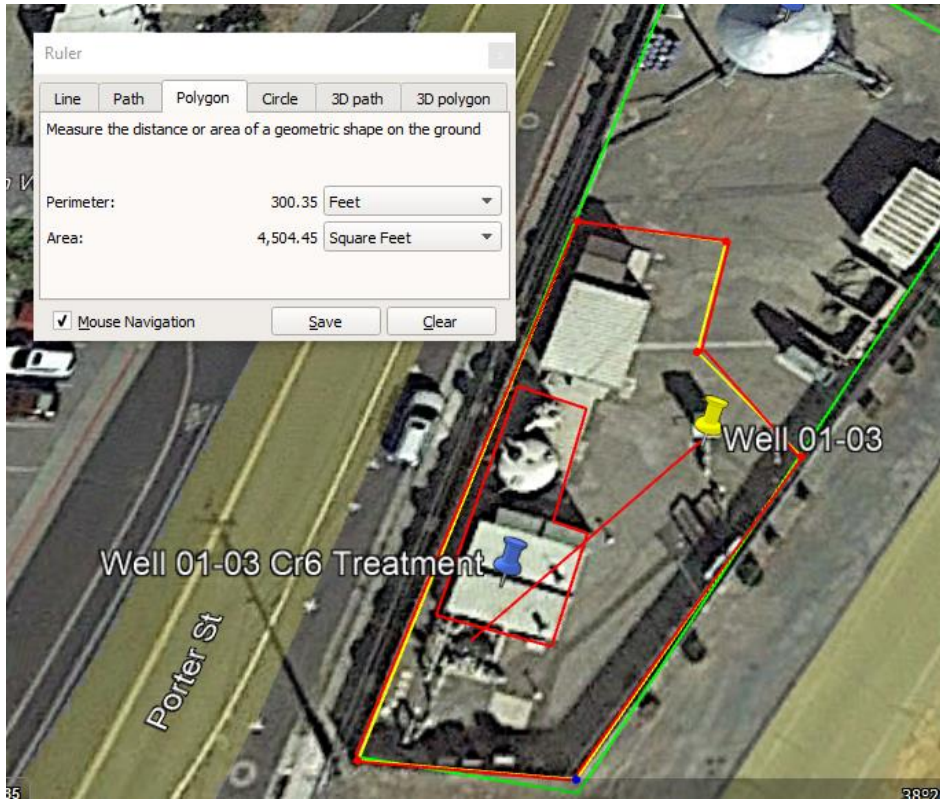


Figure 1. Site layout with well and treatment (yellow/red doubled line). Area: 4,504 ft<sup>2</sup> (approximate).



Figure 2. Site layout with well, treatment and storage tank outlined (green/largest line). Area: 11,246 ft<sup>2</sup> (approximate).

Well 07-01:



Figure 3. Well 07-01: Parcel lot. Area: 7,789 ft<sup>2</sup> (approximate).

Well 09-01:

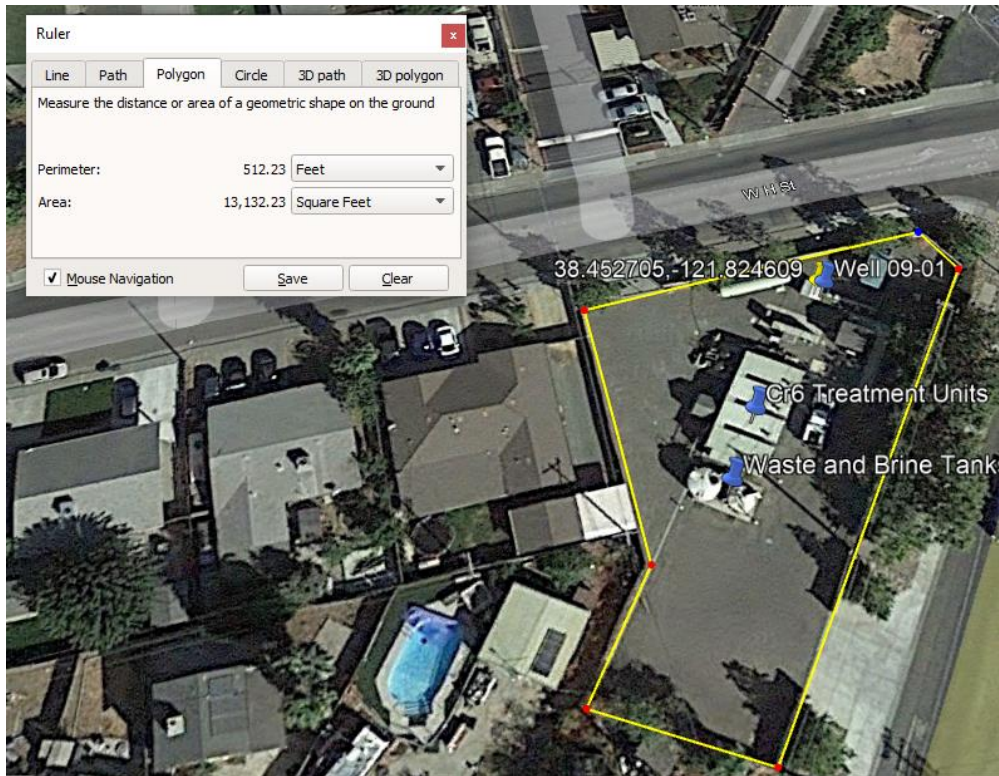


Figure 4. Well 09-01: Site perimeter. Area: 13,132 ft<sup>2</sup> (approximate).

## 2. Number and Size of Treatment Tanks

Each treatment unit consists of one modified shipping container that can house up to 4 treatment vessels. A separate modified shipping container is used to house the regeneration modules (one regeneration module per site). A brine tank and brine waste tank are located outside. Two bag filters are plumbed in parallel directly upstream of the influent to the treatment plant.

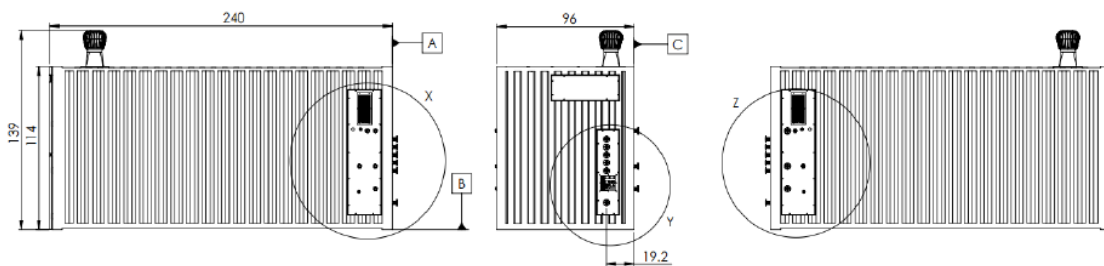


Figure 5. Modified shipping container: 240 in. x 139 in. x 96 in.

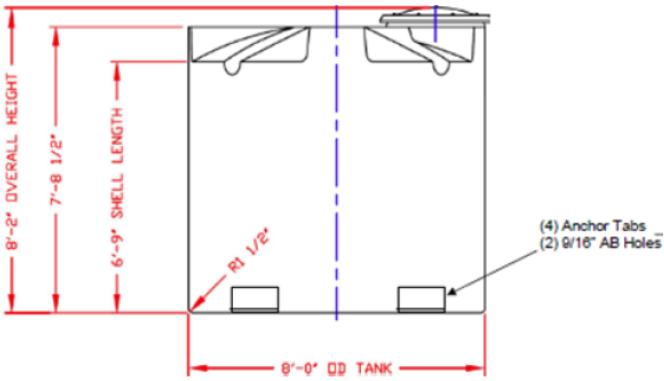


Figure 6. Brine Tank: 98 in. tall, 94 in. in diameter.

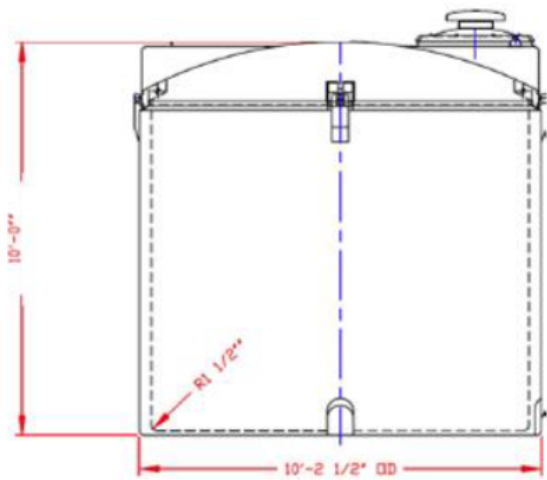


Figure 7. Brine Waste Tank: 120 in. in height, 122.5 in. in diameter (without roof vent).

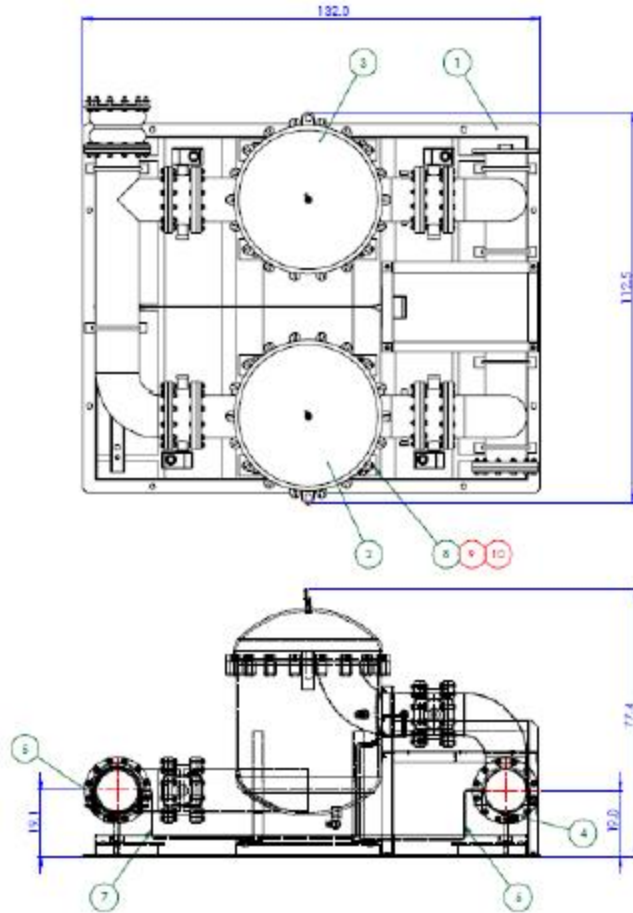


Figure 8. Bag Filter Configuration: 132 in. x 112.5 in. x 77.4 in.

Table 1. Number and Size of Treatment Systems at Each Well

Well Number	Number of Storage Units (Modified Shipping Containers)	Number of Treatment Vessels	Size of Treatment Vessels in Feet	Height of Treatment Vessels in Feet	Volume of Treatment Vessels in Feet Cubed
Well 01-03	1	4	4	7	78
Well 07-01	2	8	4	7	78
Well 09-01	3	12	4	7	78

### 3. Location of treatment plant and distance to well head

Well 01-03:

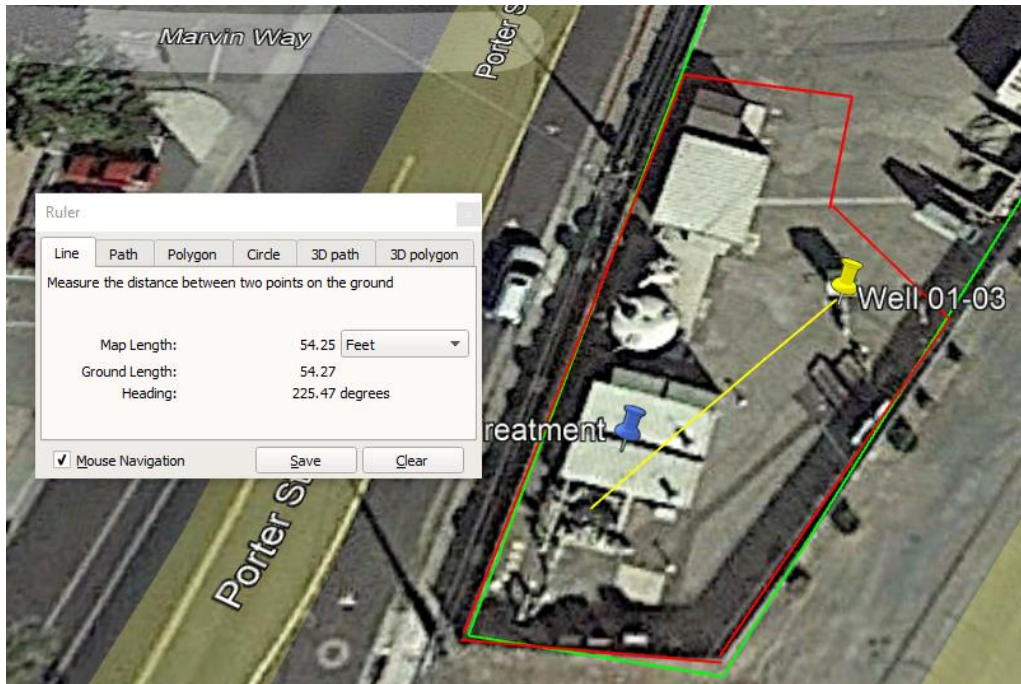


Figure 9. Well 01-03 GPS Coordinates: 38.444632,-121.826442; Distance from well to treatment (yellow diagonal line from pin): 54 ft.

Well 07-01:



Figure 10. Well 07-01 GPS Coordinates: 38.442276,-121.840163; Distance from well to treatment (yellow diagonal line from pin): 40.5 ft.

Well 09-01:

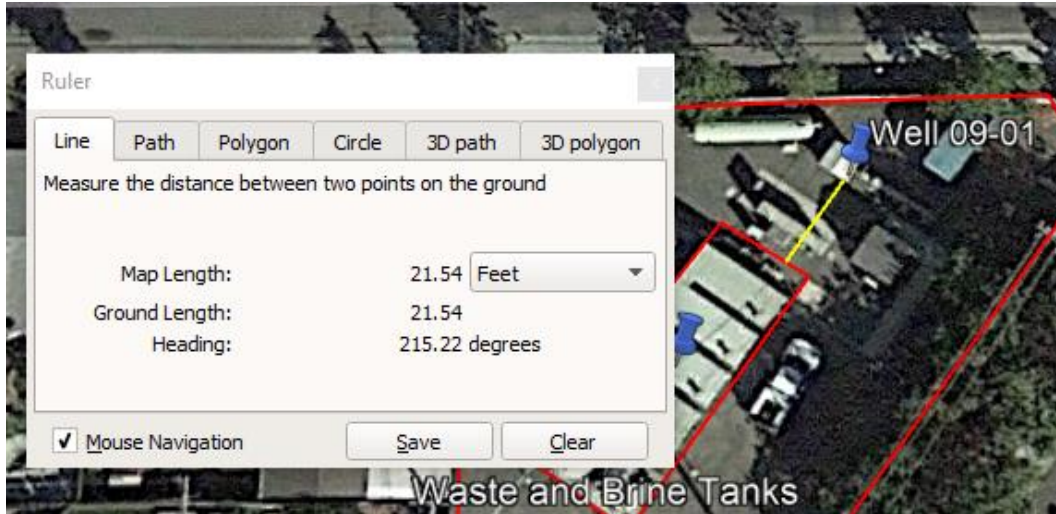


Figure 11. Well 09-01 GPS Coordinates: 38.452705,-121.824609; Distance from well to treatment (yellow diagonal line from pin): 21.5 ft.

#### 4. Building Construction

Treatment did not require construction of a traditional building. Rather, each anion exchange resin unit is located inside a modified shipping container, which were shipped to the treatment site. The brine/waste tanks, bag filters and manifold piping are all located outdoors.

#### 5. Flowrate

Each 4-vessel unit has a maximum flow rate of 600 gpm. Total capacity for each treatment site is as follows:

Table 2. Flowrates in Gallons per Minute for Each of the Three Treatment Systems

Well Number	Flowrate in Gallons per Minute
Well 01-03	600
Well 07-01	1200 gpm
Well 09-01	1800 gpm

#### 6. Resin Disposal

Resin lifespan is rated for 2500 bed volumes per vessel. Cal Water policy is to change the resin out every 7 years (through a contractor). To date, the media has not been replaced (the resin has not reached the 7-year lifespan or exceeded maximum bed volumes yet). Cal Water does not have a contractor on file to dispose of resin media currently. Cal Water intends to either dispose of the resin as hazardous waste or regenerate the resin and dispose of it as non-hazardous waste. The Waste brine is disposed of 2-3 times a year as needed through Philbro Tech. The chrome 6 end of life occurs at Arizona Smelter.

This particular treatment is optimized so that only a fraction of the brine stream used during the media regeneration process is deemed as hazardous waste. The remaining brine is recycled to the brine headworks and reused until saturated.

**From:** [Khurana, Aayush@Waterboards](mailto:Khurana,Aayush@Waterboards)  
**To:** [Huang, Chun@Waterboards](mailto:Huang,Chun@Waterboards)  
**Subject:** RE: Cr6 Systems Data Needed  
**Date:** Wednesday, February 23, 2022 10:01:45 AM

---

Chun,

Answers below in red.

Aayush

---

**From:** Huang, Chun@Waterboards <[Chun.Huang@waterboards.ca.gov](mailto:Chun.Huang@waterboards.ca.gov)>  
**Sent:** Wednesday, February 23, 2022 9:29 AM  
**To:** Khurana, Aayush@Waterboards <[Aayush.Khurana@Waterboards.ca.gov](mailto:Aayush.Khurana@Waterboards.ca.gov)>  
**Subject:** RE: Cr6 Systems Data Needed

Aayush,

Some follow-up questions for the Indio treatment systems:

- Is the resin regenerated onsite? **Yes**
- Is there any brine waste? **Yes**
  - If so, how much is disposed of, how often, and how is it disposed of (i.e., by a waste disposal company or down the sanitary sewer?) **Each site has a 4,400 gallon Waste brine tank. Phibro Tech, Inc. hauls the waste brine away. During normal operation, it would be about every ~90 days. But since the treatment plants are currently moth-balled (run ~30 minutes per day), it can take up to 6 months for there to be enough waste needing to be hauled away.**
- Even regenerated resins eventually need replacement. Is it the case that Indio just hasn't been running its hex chrome treatment long enough to need to replace the resins? **Indio hasn't run into this yet. Manufacturer recommends replacing resin every 5-7 years. Indio plans on replacing the resin once the new hex-chrom MCL is established.**
- Why is the treatment for Well 13-A located so far from the wellhead? (This is the first hex chrome treatment we've seen that's not located at the wellhead.) **Two reasons 1) lack of footprint at the wellhead 2) opposition from gated community members**

Thanks,  
Chun

---

**From:** Khurana, Aayush@Waterboards <[Aayush.Khurana@Waterboards.ca.gov](mailto:Aayush.Khurana@Waterboards.ca.gov)>  
**Sent:** Monday, February 7, 2022 3:48 PM  
**To:** McCarthy, Sean@Waterboards <[Sean.McCarthy@waterboards.ca.gov](mailto:Sean.McCarthy@waterboards.ca.gov)>  
**Cc:** Huang, Chun@Waterboards <[Chun.Huang@waterboards.ca.gov](mailto:Chun.Huang@waterboards.ca.gov)>  
**Subject:** RE: Cr6 Systems Data Needed



Hi Sean,

I gathered this from the permit amendment we issued and documents submitted to us with the permit amendment application. I'm checking with IWA to make sure this is accurate. If IWA responds with something different, I will let you know.

	Well AA	Well 13-A	Well 01-E
Footprint	7,900 ft <sup>2</sup>	10,800 ft <sup>2</sup>	3,890 ft <sup>2</sup>
No. & size of treatment tanks	12 treatment vessels (D=4ft, H=7ft)	12 treatment vessels (D=4ft, H=7ft)	12 treatment vessels (D=4ft, H=7ft)
Location/distance to wellhead	33.732583, -116.251167 at the wellhead	33.758039, -116.233821 0.7 miles from wellhead	33.721600, -116.214457 0.1 miles from wellhead
New building?	No	No	No
Max Flowrates	2400 gpm through the vessels + up to 800 gpm bypass	2400 gpm through the vessels + up to 800 gpm bypass	2400 gpm through the vessels + up to 800 gpm bypass
Resin disposal	Regeneration; no resin disposal	Regeneration; no resin disposal	Regeneration; no resin disposal
RCF Backwash	N/A	N/A	N/A

### Aayush Khurana

Water Resource Control Engineer  
Division of Drinking Water, Riverside District #20  
State Water Resources Control Board  
1350 Front Street, Rm 2050  
San Diego, CA 92101  
Office# 619-525-4646  
Cell# 510-283-4740

---

**From:** McCarthy, Sean@Waterboards <[Sean.McCarthy@waterboards.ca.gov](mailto:Sean.McCarthy@waterboards.ca.gov)>

**Sent:** Tuesday, February 1, 2022 11:27 AM

**To:** Huang, Chun@Waterboards <[Chun.Huang@waterboards.ca.gov](mailto:Chun.Huang@waterboards.ca.gov)>; Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>; Khurana, Aayush@Waterboards <[Aayush.Khurana@Waterboards.ca.gov](mailto:Aayush.Khurana@Waterboards.ca.gov)>

**Subject:** Cr6 Systems Data Needed

Here's the information we need from Indio and Coachella's existing systems. Please respond by next week if possible. Thanks.

- Size of footprint of treatment plant
- Number and size of treatment tanks
- Location of treatment plant / distance to wellhead
- Whether treatment required construction of a new building

- Flowrate
- For ion exchange, how often the resins are disposed of and how they are disposed of
- For RCF, whether the backwash is disposed of down the sanitary sewer

**Sean F. McCarthy, P.E.**  
*Chief, South Coast Section*

**State Water Resources Control Board | Division of Drinking Water**

EMAIL [Sean.McCarthy@Waterboards.ca.gov](mailto:Sean.McCarthy@Waterboards.ca.gov) | PHONE (909) 388-2602 | FAX (909) 383-4745



**From:** [Chan, Leo](#)  
**To:** [Tsui, Thomas@Waterboards](mailto:Tsui,Thomas@Waterboards)  
**Subject:** Questions regarding GN-3/WBA  
**Date:** Monday, February 7, 2022 12:53:05 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---

EXTERNAL:

Hi Thomas,

Please see the following responses to DDW questions.

1. Type of Treatment (IX, RCF, ?) IX
2. Size of footprint of treatment plant. Approx. 100' x 20'
3. Number and size of treatment tanks. Four resin vessels operating in lead-lag-polish series configuration. Two 10-ft diameter resin vessels operate in two of the three stages and two 8-ft diameter resin vessels always work as a pair for the remaining stage.
4. Location of treatment plant (WBA) and distance to well head. GN-3/WBA facility is located adjacent to the Glendale Water Treatment Plant. It is 1,145 feet from the GN-3 well site.
5. Whether treatment required construction of a new building. No. Treatment facility is fenced but enclosed.
6. Flowrate. Permitted max at 800 GPM; Normal Operation at 600 GPM
7. For ion exchange, how often the resins are disposed of and how it is disposed of Last spent resin was changed out after 4 years of operation. It was disposed as low level radioactive waste.

Leo Chan | Senior Civil Engineer | City of Glendale | Glendale Water & Power  
141 N. Glendale Avenue, Room 420 | Glendale, CA 91206 | (818) 548-3905  
[lchan@glendaleca.gov](mailto:lchan@glendaleca.gov) | [www.glendaleca.gov](http://www.glendaleca.gov) | [Follow us!](#)

Were you able to get the answers for Questions 4 and 5 below?

Thanks again,  
Rachid

**Rachid Ait-Lasri, P.E.**

*Water Resource Control Engineer*

Division of Drinking Water

State Water Resources Control Board

1001 "I" Street, 19<sup>th</sup> Floor, Sacramento, CA 95814

(916) 445-6624 | [Rachid.Ait-Lasri@waterboards.ca.gov](mailto:Rachid.Ait-Lasri@waterboards.ca.gov)

---

**From:** Victoria Kunda <[Victoria.Kunda@amwater.com](mailto:Victoria.Kunda@amwater.com)>

**Sent:** Friday, February 18, 2022 9:05 AM

**To:** Ait-Lasri, Rachid@Waterboards <[Rachid.Ait-Lasri@waterboards.ca.gov](mailto:Rachid.Ait-Lasri@waterboards.ca.gov)>

**Cc:** Jared T Bell <[Jared.Bell@amwater.com](mailto:Jared.Bell@amwater.com)>; Shilpa Singh <[Shilpa.Singh@amwater.com](mailto:Shilpa.Singh@amwater.com)>; Stephen Cook <[Stephen.Cook@amwater.com](mailto:Stephen.Cook@amwater.com)>

**Subject:** RE: CA3410017 - Parkway - Ion Exchange Treatment Plant Question

**EXTERNAL:**

Rachid,

We only have data since 2017 , so far breakthrough happened only once - after 2-2.5 years. We use ONLY virgin resin, and so far did not use any "regeneration" process (but we would like to keep it as an option in OMP). Spent resin from Parkway treatment plants was characterized prior to removal in 2020 and classified as "Non-hazardous".

Location	Media Type	Media Material	Virgin / Regen	REASON	Change Out Date
Sky Parkway	SBA-IX	Purolite® A600E/9149	Virgin	New Load - Start up	12/1/2017
Sky Parkway	SBA-IX	Lanxess Lewatit	Virgin	Breakthrough	4/21/2020
Southgate	SBA-IX	Purolite® A600E/9149	Virgin	New Load - Start up	12/1/2017
Southgate	SBA-IX	Lanxess Lewatit	Virgin	Breakthrough	2/13/2020
Stocker	SBA-IX	Purolite® A600E/9149	Virgin	New Load - Start up	12/1/2017
Stocker	SBA-IX	Lanxess Lewatit	Virgin	Breakthrough	6/28/2020

Victoria Kunda

Manager, *Water Quality/Environmental Compliance*

California American Water

4701 Beloit Drive

Sacramento, CA 95838

P: (916) 568-4278

C: (916) 764-2582

---

**From:** Ait-Lasri, Rachid@Waterboards <[Rachid.Ait-Lasri@waterboards.ca.gov](mailto:Rachid.Ait-Lasri@waterboards.ca.gov)>

**Sent:** Thursday, February 17, 2022 4:19 PM

**To:** Victoria Kunda <[Victoria.Kunda@amwater.com](mailto:Victoria.Kunda@amwater.com)>

**From:** [Randy Mayes](#)  
**To:** [Huang, Chun@Waterboards](mailto:Huang, Chun@Waterboards)  
**Cc:** [Delgado, Manuel@Waterboards](mailto:Delgado, Manuel@Waterboards); [Steve Bigley](#)  
**Subject:** FW: Additional Questions on CVWD's Ion Exchange Treatment Plants  
**Date:** Thursday, March 3, 2022 1:22:35 PM  
**Attachments:** [image002.png](#)

---

EXTERNAL:

Hi Chun,

The previously submitted information represented waste hauled off during routine operations when approximately 1/3 of the treatment plant's capacity is being utilized.

In 2019 prior to the pandemic, CVWD treated a total of 789.672 MG from its IXTP plants and hauled off a total of 1.149 MG of treated waste brine.

Sincerely,

Randy Mayes  
Water Quality Supervisor

---

**From:** Huang, Chun@Waterboards <[Chun.Huang@waterboards.ca.gov](mailto:Chun.Huang@waterboards.ca.gov)>  
**Sent:** Wednesday, March 2, 2022 3:48 PM  
**To:** Randy Mayes <[RMayes@cvwd.org](mailto:RMayes@cvwd.org)>; Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>  
**Cc:** Steve Bigley <[SBigley@cvwd.org](mailto:SBigley@cvwd.org)>  
**Subject:** RE: Additional Questions on CVWD's Ion Exchange Treatment Plants

**External e-mail:** Do not click on links or open attachments unless you recognize the sender and you know the content is safe.

Hi Randy,

Sorry, one small clarification is needed:

Regarding highlighted response below, does CVWD dispose of the spent brine 5 times per week, and 5,000 gallons per load? Seems a little high, so wanted to confirm.

Thanks,

*Chun*

Chun Huang, P.E.  
Riverside District Engineer  
Division of Drinking Water

1350 Front Street, Rm 2050  
San Diego, CA 92101

Office: (619) 525-4775  
Cell: (619) 865-3278  
Email: [Chun.Huang@Waterboards.ca.gov](mailto:Chun.Huang@Waterboards.ca.gov)

Visit our website: [http://www.waterboards.ca.gov/drinking\\_water/programs/index.shtml](http://www.waterboards.ca.gov/drinking_water/programs/index.shtml)

---

**From:** Randy Mayes <[RMayes@cvwd.org](mailto:RMayes@cvwd.org)>  
**Sent:** Tuesday, March 01, 2022 2:49 PM  
**To:** Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>  
**Cc:** Huang, Chun@Waterboards <[Chun.Huang@waterboards.ca.gov](mailto:Chun.Huang@waterboards.ca.gov)>; Steve Bigley <[SBigley@cvwd.org](mailto:SBigley@cvwd.org)>  
**Subject:** RE: Additional Questions on CVWD's Ion Exchange Treatment Plants

EXTERNAL:

Hi Manuel,

I hope this email finds you doing well!

In the email thread below, please see CVWD's responses in blue, thanks!

Sincerely,

Randy Mayes  
Water Quality Supervisor



Coachella Valley Water District  
(760) 398-2661 ext.2575  
[www.cvwd.org](http://www.cvwd.org)

---

**From:** Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>  
**Sent:** Wednesday, February 23, 2022 5:30 PM  
**To:** Randy Mayes <[RMayes@cvwd.org](mailto:RMayes@cvwd.org)>  
**Subject:** Additional Questions on CVWD's Ion Exchange Treatment Plants

**External e-mail:** Do not click on links or open attachments unless you recognize the sender and you know the content is safe.

Hi Randy,

The following additional questions came up on CVWD's Ion Exchange Treatment Plants. At your most convenient time, can you please review and respond?

- Is the "treated waste salt brine and hazardous waste residuals" a single waste stream? i.e., are the residuals part of the salt brine waste?
  - There are two waste streams that are generated at these facilities. The first stream is spent brine hauled off to KVAC 8910 Rochester Avenue, Rancho Cucamonga, CA. The second stream includes filter cakes hauled off as a hazardous waste.
- If they're the same waste stream, how much is disposed, how often, and by whom?
  - N/A
- If they're separate, for each stream (brine and residuals) how much is disposed, how often, and by whom?
  - These answers are based off of both 6806 and 7802 IXTP's being operational and online on a full time basis for a calendar year.
    - The Brine (or Spent Brine) that gets hauled off in a tanker truck by KVAC Environmental Services. This is taken 5 times weekly at 5000 gallons per load.
    - Arsenic Sludge (Filter Cakes) taken in 55 gal drums by Advanced Chemical Transport Incorporated (DBA ACT enviro) are taken to Beatty, Nevada Class 1 Hazardous Waste Facility. Around 5 drums are removed every 3 months when not in full operation. When in full operation we can get up to 10 or so drums.
- How do they dispose of the spent resin? Does a third-party company handle the disposal?
  - CVWD's manufacturer of the media (Resin Tech) tests the media for regeneration. Based upon their analysis of the media, a third-party contractor (HTS) is used to dispose of the resin. Resin characterized as hazardous waste is disposed in a Class 1 landfill in Beatty, Nevada. Non-hazardous resin is sent to a landfill.
- Who characterizes the spent resin as hazardous or non-hazardous?
  - Same

Thanks,

*Manuel*

Manuel Delgado, P.E.  
Associate Sanitary Engineer  
Division of Drinking Water  
State Water Resources Control Board  
1350 Front Street, Rm 2050  
San Diego, CA 92101  
Office: (619) 525-4408  
Mobile: (619) 274-6504  
Fax: (619) 525-4383

Email: [Manuel.Delgado@Waterboards.ca.gov](mailto:Manuel.Delgado@Waterboards.ca.gov)

---

**From:** Randy Mayes <[RMayes@cvwd.org](mailto:RMayes@cvwd.org)>

**Sent:** Wednesday, February 16, 2022 2:13 PM

**To:** Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>

**Cc:** Steve Bigley <[SBigley@cvwd.org](mailto:SBigley@cvwd.org)>

**Subject:** RE: REQUEST - Cr6 Systems Data Needed

EXTERNAL:

Good afternoon Manuel,

I hope this email finds you doing well!

In the email thread below, you will find illustrated in blue responses to DDW's inquiry. Thanks!

Sincerely,

Randy Mayes

Water Quality Supervisor

---

**From:** Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>

**Sent:** Tuesday, February 8, 2022 11:08 AM

**To:** Randy Mayes <[RMayes@cvwd.org](mailto:RMayes@cvwd.org)>

**Subject:** REQUEST - Cr6 Systems Data Needed

**External e-mail:** Do not click on links or open attachments unless you recognize the sender and you know the content is safe.

Can you please assist me with the questions below for IXTP 6806, 7802 and 7991?

Thank you,

Manuel

---

**From:** McCarthy, Sean@Waterboards <[Sean.McCarthy@waterboards.ca.gov](mailto:Sean.McCarthy@waterboards.ca.gov)>

**Sent:** Tuesday, February 1, 2022 11:27 AM

**To:** Huang, Chun@Waterboards <[Chun.Huang@waterboards.ca.gov](mailto:Chun.Huang@waterboards.ca.gov)>; Delgado, Manuel@Waterboards <[Manuel.Delgado@waterboards.ca.gov](mailto:Manuel.Delgado@waterboards.ca.gov)>; Khurana, Aayush@Waterboards <[Aayush.Khurana@Waterboards.ca.gov](mailto:Aayush.Khurana@Waterboards.ca.gov)>

**Subject:** Cr6 Systems Data Needed

Here's the information we need from Indio and Coachella's existing systems. Please respond by next week if possible. Thanks.



- Size of footprint of treatment plant
  - WS 6806 IXTP: An estimated footprint area of 24,000 ft<sup>2</sup>
  - WS 7802 IXTP: An estimated footprint area of 24,000 ft<sup>2</sup>
  - WS 7991 IXTP: An estimated footprint area of 10,000 ft<sup>2</sup>
- Number and size of treatment tanks
  - WS 6806 IXTP: 32 vessels; Diameter = 4' Height = 6'; Volume = 465 gallons
  - WS 7802 IXTP: 32 vessels; Diameter = 4' Height = 6'; Volume = 465 gallons
  - WS 7991 IXTP: 16 vessels; Diameter = 3' Height = 4'; Volume = 185 gallons
- Location of treatment plant / distance to wellhead
  - WS 6806 IXTP: 88-995 Avenue 60, Thermal, CA 92274
  - WS 7802 IXTP: 65-922 Tyler Street, Thermal, CA 92274
  - WS 7991 IXTP: 67-050 Hammond Road, Mecca, CA 92254
  
  - WS 6806 IXTP: W6806 is approximately 265' – W6807 is approximately 1,550'
  - WS 7802 IXTP: W7802 is approximately 85' – W7803 is approximately 1,170'
  - WS 7991 IXTP: W7991 is approximately 57'
- Whether treatment required construction of a new building
  - WS 6806 IXTP: Yes, building includes architectural improvements to blend in with the community.
  - WS 7802 IXTP: Yes, building includes architectural improvements to blend in with the community.
  - WS 7991 IXTP: Plant is installed in cargo containers and brine tanks are in a cement block walled enclosure.
- Flowrate
  - WS 6806 IXTP: 4,000 gpm (Design Capacity); The average flowrate of treated water over the last 5 years is 31.3 million gallons per month (725 gpm)
  - WS 7802 IXTP: 4,000 gpm (Design Capacity); The average flowrate of treated water over the last 5 years is 12.4 million gallons per month (287 gpm).
  - WS 7991 IXTP: 1,200 gpm (Design Capacity); The average flowrate of treated water over the last 5 years is 3.6 million gallons per month (83 gpm).
- For ion exchange, how often the resins are disposed of and how they are disposed of
  - WS 6806 IXTP: The resin lasted 8 years. Resin characterized as hazardous waste is disposed in a Class 1 landfill in Beatty, Nevada. Non-hazardous resin is sent to a landfill.
  
  - WS 7802 IXTP: Due to less frequent runtime, the resin at this site has not been replaced.
  - WS 7991 IXTP: The resin lasted 5 years. Resin characterized as hazardous waste is disposed in a Class 1 landfill in Beatty, Nevada. Non-hazardous resin is sent to a landfill.
- For RCF, whether the backwash is disposed of down the sanitary sewer
  - Non Applicable -- CVWD does not use reduction coagulation filtration treatment. CVWD's ion exchange treatment plants produce multiple waste streams. In addition to resin disposal, these plants also produce a treated waste salt brine and hazardous

waste residuals. There are no sanitary sewers serving the treatment plants and none of the waste streams can be disposed in sanitary sewers.

**Sean F. McCarthy, P.E.**  
Chief, South Coast Section

**State Water Resources Control Board | Division of Drinking Water**

EMAIL [Sean.McCarthy@Waterboards.ca.gov](mailto:Sean.McCarthy@Waterboards.ca.gov) | PHONE (909) 388-2602 | FAX (909) 383-4745



**CONFIDENTIAL COMMUNICATION**

This electronic mail message and any attachments are intended only for the use of the addressee(s) named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not an intended recipient, or the employee or agent responsible for delivering this e-mail to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you received this e-mail message in error, please immediately notify the sender by replying to this message or by telephone. Thank you.

**CONFIDENTIAL COMMUNICATION**

This electronic mail message and any attachments are intended only for the use of the addressee(s) named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not an intended recipient, or the employee or agent responsible for delivering this e-mail to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you received this e-mail message in error, please immediately notify the sender by replying to this message or by telephone. Thank you.

**CONFIDENTIAL COMMUNICATION**

This electronic mail message and any attachments are intended only for the use of the addressee(s) named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not an intended recipient, or the employee or agent responsible for delivering this e-mail to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you received this e-mail message in error, please immediately notify the sender by replying to this message or by telephone. Thank you.

**From:** [Tabor, Rebecca@Waterboards](mailto:Tabor,Rebecca@Waterboards)  
**To:** [Crenshaw, Reese@Waterboards](mailto:Crenshaw,Reese@Waterboards); [Rowe, Paul@Waterboards](mailto:Rowe,Paul@Waterboards)  
**Cc:** [Miller, Zach@Waterboards](mailto:Miller,Zach@Waterboards)  
**Subject:** RE: hex chrome - treatment info  
**Date:** Thursday, February 10, 2022 4:21:50 PM

---

Zach and Reese- Here is the information you requested.




### **California Water Service (Cal Water) Willows (CA1110003)**

- Type of treatment (IX, RCF, ?)  
IX- 4 wells that each have a separate treatment station. Each station uses Strong Base Anion Exchange (Purolite A600E-9149 anionic resin)
- Size of footprint of treatment plant  
4 Stations each approximately 3500 ft<sup>2</sup>
- Number and size of treatment tanks  
Station 4 – 4 IX Vessels- 4'D x 7'H each  
Station 7 – 4 IX Vessels- 4'D x 7'H each  
Station 8 – 8 IX Vessels- 4'D x 7'H each  
Station 9 – 4 IX Vessels- 4'D x 7'H each
- Location of treatment plant and distance to well head  
All 4 treatment plants are at the wellheads
- Whether treatment required construction of a new building,  
Yes, building containers were installed at each station to house IX equipment
- Flowrate  
Station 4 – 500 gpm  
Station 7 – 500 gpm  
Station 8 – 1200 gpm  
Station 9 – 550 gpm
- For ion exchange, how often the resins are disposed of and how they are disposed of  
Estimated every 11 yrs (resin has not been replaced yet)
- For RCF, whether the backwash is disposed of down the sanitary sewer  
NA

### **Voyles Trailer Park (CA1100254)**

- Type of treatment (IX, RCF, ?)  
IX – Two vessels in series. The first vessel contains Purolite C100 cation exchange resin to soften the water and the second vessel contains Purolite A520E for nitrate and hexavalent chromium removal.
- Size of footprint of treatment plant  
Approximately 12' x12'
- Number and size of treatment tanks  
2 IX Vessels- 16"D x 65"H each
- Location of treatment plant and distance to well head  
Treatment is at well head
- Whether treatment required construction of a new building,  
No

- Flowrate  
60 gpm
- For ion exchange, how often the resins are disposed of and how they are disposed of  
Every 1,000,000 gallons treated or when the treated nitrate levels exceed 8 mg/L (as N), whichever occurs first. (Resin has not been replaced yet.)
- For RCF, whether the backwash is disposed of down the sanitary sewer  
NA

**From:** [Weininger, Jonathan@Waterboards](mailto:Weininger,Jonathan@Waterboards)  
**To:** [Tejeda, Juan](mailto:Tejeda, Juan)  
**Subject:** RE: Questions About Las Lomas and Oak Hills  
**Date:** Friday, February 11, 2022 3:51:00 PM  
**Attachments:**   
  


---

Thank you, Juan!

---

**From:** Tejeda, Juan <jtejeda@calwater.com>  
**Sent:** Friday, February 11, 2022 3:43 PM  
**To:** Weininger, Jonathan@Waterboards <Jonathan.Weininger@waterboards.ca.gov>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:

Jonathan,

The information below is correct according to the district. I added the distances from well head to treatment plant to the table.

I hope this helps.

Have a great weekend!

**Juan Tejeda**

WQ Program Mgr

**CALIFORNIA WATER SERVICE**

**209-479-8255**



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <Jonathan.Weininger@waterboards.ca.gov>  
**Sent:** Tuesday, February 8, 2022 4:06 PM  
**To:** Tejeda, Juan <jtejeda@calwater.com>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Thank you for the update, Juan. If you have a chance, would you mind reviewing the info in the table below for accuracy? Does Cal Water have the distance between the well and treatment plant for each of the three plants below? Thank you!

	<b>Las Lomas St 305-01 RCOF</b>	<b>Las Lomas St 303-01 Ion Exchange</b>	<b>Oak Hills St. 203-01 Ion Exchange</b>
Size of footprint of treatment plant	Full lot size is 10,850 sq feet.	Full lot size is 36,255 sq feet.	Full lot size is 20,065 sq feet.
Number and size of treatment tanks	Three new reduction contact tanks for RCOF process (4'D x 5' side shell length). A ferrous sulfate chemical storage tank (300 gallons?) was also added.  ATEC filtration system - five media filled pressure filters (4'D x 5' side shell length) with 15200 gallon waste tank.	One 8' x 40' package Envirogen SIMPACK IX package plant (16 total IX vessels) with 5 prefilters outside the plant, one brine processing unit package (8'x20'), one 1500 gal brine tank , one 6650 gal double contained waste brine tank	One 8' x 40' package Envirogen SIMPACK IX package plant (16 total IX vessels) with 5 prefilters outside the plant, one brine processing unit package (8'x20'), one 1500 gal brine tank , one 6650 gal double contained waste brine tank
Location of treatment plant and distance to well head	10 feet	17 feet	8 feet
Whether treatment required construction of a new building	No	No	No
Flowrate (gpm)	540	475	275

**From:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>

**Sent:** Tuesday, February 8, 2022 2:28 PM

**To:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>

**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:

Jonathan,

The district called me this afternoon and said the waste brine tank is 6,650 gallons and double contained and not 8,000 gallons.

I apologize for the error.

Thanks,

## Juan Tejada

WQ Program Mgr

CALIFORNIA WATER SERVICE

209-479-8255



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Tejada, Juan

**Sent:** Monday, February 7, 2022 4:02 PM

**To:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>

**Subject:** RE: Questions About Las Lomas and Oak Hills

Jonathan,

The brine processing unit is 8' x 20'.

The brine (salt) tank is 1,500 gallons.

The waste brine tank is 8,000 gallons and double contained.

Thanks,

## Juan Tejada

WQ Program Mgr

CALIFORNIA WATER SERVICE

209-479-8255



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>

**Sent:** Monday, February 7, 2022 3:12 PM

**To:** Tejada, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>

**Subject:** RE: Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Juan, on that note, is the following info correct about the IX plants (from the Ops Plans)?

The brine processing unit package is 10'x20'.

The brine tank size is 1090 or 1500 gal brine tank (the ops plan lists both)?

The waste brine tank is 6650 gal and double contained.

Thanks again,  
Jonathan

---

**From:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Sent:** Monday, February 7, 2022 3:08 PM  
**To:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:

Jonathan,

No, I do not. I called the district for the information.

## Juan Tejeda

WQ Program Mgr

CALIFORNIA WATER SERVICE

209-479-8255



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>  
**Sent:** Monday, February 7, 2022 3:07 PM  
**To:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Thank you, Juan. This info is different than what was provided in the operations plans. Do you have updated versions of the ops plan with current info? We have plans from 2015.

Thanks again,  
Jonathan

---

**From:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Sent:** Monday, February 7, 2022 3:02 PM  
**To:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:



Jonathan,

The footprint for both stations is 8' x 40' with 16 total vessels.

For OH-203 there are 4 pre-filters.

For LL-303 there are 5 pre-filters.

Please let me know if you have any questions.

Thanks,

**Juan Tejeda**

WQ Program Mgr

**CALIFORNIA WATER SERVICE**

209-479-8255



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>

**Sent:** Monday, February 7, 2022 2:35 PM

**To:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>

**Subject:** RE: Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Thank you, Juan. Sorry, I have two more questions about the Oak Hills IX plant. Can you confirm the following info about the plant is correct? I was a bit unclear about the highlighted sections:

- The size of the SIMPACK package plant. Is it 10' x 35' with 16 total IX vessels?
- Are there 10 prefilters outside the plant?

Thank you,  
Jonathan

---

**From:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>

**Sent:** Thursday, February 3, 2022 11:12 AM

**To:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>

**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:

Please see responses in green below.

Thanks,

**Juan Tejeda**

WQ Program Mgr

**CALIFORNIA WATER SERVICE**

**209-479-8255**



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>

**Sent:** Wednesday, February 2, 2022 4:33 PM

**To:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>

**Subject:** Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Hi Juan, hope all is well. If you have a chance, would you mind providing us some info about the Las Lomas and Oak Hills systems, specifically the following?

- For the Las Lomas and Oak Hills ion exchange plants, how often are the resins disposed, **we have not changed out any filter media since 2017.**of and how they are disposed of, **the waste is disposed of annually?**
- For the Las Lomas RCF WTP, how is the backwash water disposed? Is it sent to the sanitary sewer? **It goes into the Tank and then into the sanitary sewer.**

Thank you,

Jonathan Weininger, PE | Monterey District Engineer

[State Water Resources Control Board - Division of Drinking Water](#)

Office: (831) 655-6939 or Direct: (831) 655-6932

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to

which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.

**From:** [Weininger, Jonathan@Waterboards](mailto:Weininger,Jonathan@Waterboards)  
**To:** [Tejeda, Juan](mailto:Tejeda, Juan)  
**Subject:** RE: Questions About Las Lomas and Oak Hills  
**Date:** Wednesday, February 16, 2022 4:16:00 PM

---

Juan, that helps a lot. Thank you!

---

**From:** Tejeda, Juan <jtejeda@calwater.com>  
**Sent:** Wednesday, February 16, 2022 4:10 PM  
**To:** Weininger, Jonathan@Waterboards <Jonathan.Weininger@waterboards.ca.gov>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:

Jonathan,

1. Yes, I was referring to the brine waste.
2. The brine waste is disposed by a Certified Waste Company. Last time it was disposed by *BelShire Company* (1/20/2022). It is transported to US Ecology, Beatty, Nevada 89303.
3. 55 gallons of brine waste annually.

I hope this helps.

## Juan Tejeda

WQ Program Mgr

**CALIFORNIA WATER SERVICE**

209-479-8255



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>  
**Sent:** Wednesday, February 16, 2022 3:23 PM  
**To:** Tejeda, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Hi Juan, sorry for all the questions, but we have a few follow up questions. Below you stated that the IX plants waste is disposed of annually. Are you referring to the brine waste? How is the waste brine disposed and who disposes the waste to which destination? How much is typically disposed annually?

Thank you,

Jonathan

---

**From:** Weininger, Jonathan@Waterboards  
**Sent:** Thursday, February 3, 2022 12:04 PM  
**To:** Tejada, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

Thank you, Juan!

Jonathan Weininger  
Division of Drinking Water | (831) 655-6932

---

**From:** Tejada, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Sent:** Thursday, February 03, 2022 11:12 AM  
**To:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>  
**Subject:** RE: Questions About Las Lomas and Oak Hills

EXTERNAL:

Please see responses in green below.

Thanks,

**Juan Tejada**

WQ Program Mgr

CALIFORNIA WATER SERVICE

209-479-8255



**Quality. Service. Value.**

[calwater.com](http://calwater.com)

---

**From:** Weininger, Jonathan@Waterboards <[Jonathan.Weininger@waterboards.ca.gov](mailto:Jonathan.Weininger@waterboards.ca.gov)>  
**Sent:** Wednesday, February 2, 2022 4:33 PM  
**To:** Tejada, Juan <[jtejeda@calwater.com](mailto:jtejeda@calwater.com)>  
**Subject:** Questions About Las Lomas and Oak Hills

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Hi Juan, hope all is well. If you have a chance, would you mind providing us some info about the Las Lomas and Oak Hills systems, specifically the following?

- For the Las Lomas and Oak Hills ion exchange plants, how often are the resins disposed, we have not changed out any filter media since 2017. of and how they are disposed of, the waste is disposed of annually?

- For the Las Lomas RCF WTP, how is the backwash water disposed? Is it sent to the sanitary sewer? **It goes into the Tank and then into the sanitary sewer.**

Thank you,

Jonathan Weininger, PE | Monterey District Engineer

[State Water Resources Control Board - Division of Drinking Water](#)

Office: (831) 655-6939 or Direct: (831) 655-6932

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.

This e-mail and any of its attachments may contain California Water Service Group proprietary information and is confidential. This e-mail is intended solely for the use of the individual or entity to which it is addressed. If you are not the intended recipient of this e-mail, please notify the sender immediately by replying to this e-mail and then deleting it from your system.