Engineering Report

For Consideration of a Permit Amendment Application from Santa Clarita Valley Water Agency

Serving a Portion of the City of Santa Clarita and unincorporated portion of Los Angeles County in the communities of Castaic, Saugus, Newhall, Stevenson Ranch, Valencia, and Canyon Country

November --, 2025

Division of Drinking Water
State Water Resources Control Board

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ACRONYMS AND ABBREVIATIONS

1,1,1-TCA	1,1,1-trichloroethane
1,2-DCA	1,2-Dichloroethane
AF	Acre-feet
ANSI	American National Standard Institute
ASME	American Society of Mechanical Engineers
BAT	Best Available Technologies
BTEX	Gasoline-related VOCs (benzene, toluene, ethylbenzene, and xylenes)
bgs	Below ground surface
CCR	California Code of Regulation
CEQA	California Environmental Quality Act
cis-1,2-DCE	cis-1,2-dichloroethylene
DLR	Detection Limit for the Purposes of Reporting
DTSC	Department of Toxic Substances Control
eARDWP	Electronic Annual Report to the Drinking Water Program
EBCT	Empty Bed Contact Time
ETBE	ethyl tert-butyl ether
GAC	Granular activated carbon
IX	Ion Exchange
gph	Gallons per hour
gpm	Gallons per minute
hp	Horsepower
HPC	Heterotrophic Plate Count
HSLA	High Strength Low Alloy

LACWWD	Los Angeles Department of Public Works – Water Works District
LARWQCB	Los Angeles Regional Water Quality Control Board
MCL	Maximum contaminant level
MG	Million gallons
mg/L	Milligrams per liter
MGD	Million gallons per day
mm	Millimeter
MBK	methyl butyl ketone
MEK	methyl ethyl ketone
MIBK	methyl isobutyl ketone
MTBE	methyl tert-butyl ether
ND	Non-detected
NDMA	N-nitrosodimethylamine
ng/L	Nanograms per liter
NL	Notification level (Note: Pursuant to AB2528, the term “Notification level” replaces the term “action level” starting January 1, 2005. The NL is a health-based advisory level used by the Division for a chemical in drinking water that lacks a MCL)
NPDES	National Pollutant Discharge Elimination System
NSF	National Sanitation Foundation
OMMP	Operation, Maintenance, and Monitoring Plan
PCE	Tetrachloroethylene
PFAS	Per- and Polyfluoroalkyl Substances
PFHxS	Perfluorohexane sulfonic acid
PS Code	Primary Station Code
psi	Pounds per square inch

psig	Pounds per square inch, gauge
PVC	Polyvinyl Chloride
SCADA	Supervisory Control and Data Acquisition
SCVWA	Santa Clarita Valley Water Agency
SPTF	Saugus Perchlorate Treatment Facility
SWRCB	State Water Resource Control Board
TAME	tert-amyl methyl ether
TBA	tributyl alcohol
TCE	Trichloroethylene
TDS	Total dissolved solids
TICs	Tentatively identified compounds
TOC	Total Organic Carbon
TPHg	Gasoline-range hydrocarbons
µg/L	Micrograms per liter
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	Underground storage tank
VOCs	Volatile organic chemicals
wt.	weight

1. INTRODUCTION

1.1. Purpose of Report

The Santa Clarita Valley Water Agency (hereinafter SCVWA) has submitted a permit amendment application dated November 23, 2022 (*Appendix A*), to the California State Water Resources Control Board (SWRCB), Division of Drinking Water (hereinafter Division) to change the status of Well V201 from inactive to active and to add a treatment system that includes an ion exchange system for perchlorate removal, a granular activated carbon system for volatile organic chemicals (VOCs) removal and a chloramination system for Well V201.

This permit amendment was prepared in accordance with the Division's Process Memo 97-005, which was last revised on September 21, 2020.

1.2. Background Information

Well V201 is one of the several existing water supply wells located in the Santa Clarita Valley that pumps groundwater solely from the Saugus Formation. The well was removed from service in 2010, when perchlorate was detected in the well at the concentrations exceeding its maximum contaminant level (MCL) of 6 µg/L. Operation of Well V201 was placed back into service in 2017, with groundwater treated by an ion exchange (IX) system, and then discharged to the storm drain under a National Pollutant Discharge Elimination System (NPDES) permit. In 2018, detections of volatile organic compounds (VOCs), specifically trichloroethylene (TCE) were detected from Well V201 with the concentration of 0.87 ug/L. Since the first detection, the TCE concentrations have ranged from non-detect (ND) to 1.3 ug/L. The well was placed offline in April 2021.

SCVWA evaluated Well V201 in reference to the Division's Process Memo 97-00-R2020 – Revised Guidance for Direct Domestic Use of Extremely Impaired Sources (97-005 Process Memo). The Drinking Water Guideline 97-005 Documentation Report for Well V201 prepared by EKI Environmental & Water, Inc. for SCVWA is provided in *Appendix B*.

1.2.1. Description of System

The source of water supply for SCVWA's potable water system currently consists of 40 active groundwater wells, 8 groundwater and 2 surface water treatment facilities. SCVWA also has two purchased turnout water connections (one-way) to provide water to Los Angeles Department of Public Works – Water Works District (LACWWD) 36 – Val Verde and Peter Pitchess Honor Rancho Detention Center during their emergencies. SCVWA's wells can produce approximately 75.7 million gallons per day (MGD) of water.

According to the Electronic Annual Report to the Drinking Water Program (eARDWP) submitted by the SCVWA, the water system recorded a total water production of 64,151 Acre-Feet (AF) in 2024. Around 18,540 AF was produced by the groundwater wells,

representing approximate 28.9 percent of the total production, while 45,611 AF was produced by the surface treatment facilities, representing approximate 71.1 percent of the total production.

1.2.2. Permit History

SCVWA is currently operating under the authority of a domestic water supply permit issued by the Division on December 20, 2024. Since then, the permit has been amended three times. Table 1 provides a summary of the permit history.

Table 1: Permit History

Issue Date	Permit No.	Description
12/20/2024	05-22-24P-002	Consolidation Domestic Water Supply Permit.
2/19/2025	1910240PA-001	To add two subsurface, prestressed concrete tanks, Nimbus Tanks 1 and 2.
7/14/2025	1910240PA-002	To add a residual management system to the Lower Bellows Tanks.
8/21/2025	1910240PA-003	To change status of Wells C4, C6, and P4 from standby to inactive.

1.3. Sources of Information

Information for this report was obtained from documentation submitted by SCVWA to support the permit amendment application, Division files, phone discussions and email correspondences between Division staff and SCVWA personnel, 97-005 Technical Report prepared by EKI Environmental and Water, Inc., consultant to SCVWA dated February 2025, and a field visit conducted on June 24, 2025. The investigation and preparation of this report was undertaken by Mr. Saeedreza Hafeznezami, Ph.D., P.E., Senior Water Resource Control Engineer, and Ms. Chau Tran, Water Resource Control Engineer under the supervision of Mr. Bill Liang, P.E., Angeles District Engineer.

2. INVESTIGATION AND FINDINGS

2.1. Saugus Formation Characteristics

The Saugus Formation is present throughout the region and consists of a series of interbedded, leaky water-bearing layers, which are composed of semiconsolidated sandstone, siltstone, and conglomerate. The base of fresh water within the formation extends to a depth of approximately 5,500 feet in the region. Depending on location, Saugus Formation groundwater is predominantly a confined system but is present under unconfined conditions in the shallowest water bearing zones where the Alluvial Aquifer is absent. The exposed portions of the Saugus Formation are recharged by precipitation. Groundwater from the alluvium flowing downward into the Saugus Formation occurs in the upstream portions of the alluvium located in the central and eastern portions of the Valley. Minor recharge may also occur through irrigation seepage where land is cultivated. Discharge from the Saugus Aquifer has historically occurred primarily via groundwater extraction and via outflow to the overlying Alluvial Aquifer in the western portion of the Saugus Formation.

2.2. Contaminant Sites

2.2.1. Whittaker-Bermite

Historically, the Whittaker-Bermite site was a munitions and explosives production facility located hydraulically upgradient of the Well V201, Saugus Wells 1 and 2. In addition to perchlorate, Whittaker-Bermite used and is known to have historical releases of other chemicals, including VOCs, which have impacted on-site soils and groundwater in the underlying aquifer zones, including the Alluvial Aquifer and Saugus Formation. Since the early 2000s, significant work has been completed by the U.S. Army Corps of Engineers (USACE), Whittaker, and SCVWA to characterize the perchlorate contamination within the Whittaker-Bermite site and offsite in the Alluvial Aquifer and Saugus Formation. A major component of these investigations was the installation of multi-level monitoring wells to monitor and evaluate the spatial and temporary distribution of perchlorate in groundwater. The Whittaker-Bermite site was found to be the source of regional perchlorate contamination in the Summary Judgment (U.S. District Court for the Central District of California 2003). SCVWA and Whittaker negotiated a Settlement Agreement in May 2007 to address perchlorate contamination that impacted the Saugus Formation production wells. Contamination of Saugus Formation groundwater primarily originated from discharges of perchlorate and VOCs, mainly TCE and PCE, directly to the Saugus Formation on the Whittaker site. Three different occurrences of groundwater at the Whittaker Bermite site include Northern Alluvium, Saugus Aquifer and Perched Groundwater.

Well V-201, Saugus Well 1, and Saugus Well 2 are located downgradient of the Whittaker-Bermite site and contain perchlorate at concentrations exceeding the maximum contaminant level (MCL) of 6 µg/L. These wells were constructed within the deeper Saugus Formation. The Saugus Perchlorate Treatment Facility (SPTF) was installed to remove perchlorate from water produced by Saugus Wells 1 and 2 in 2011. In 2010, perchlorate was detected in Well V201 at 5 ug/L, which was very close to the MCL of 6 ug/L, and the well was removed from service.

2.2.2. Saugus Industrial Center (SIC)

SIC site is located north and east of Saugus Wells 1 and 2, and upgradient of Well V201. It is a former manufacturing facility producing polyvinyl chloride (PVC) whose process included use of vinyl chloride, vinyl acetate, TCE, toluene, and 1,2-dichloroethane (1,2-DCA) to clean process equipment. Chemicals that have exceeded their respective MCLs in groundwater samples collected at the SIC site include 1,1,1-trichloroethane (1,1,1-TCA), 1,2-DCA, benzene, carbon tetrachloride, chloroform, cis 1,2-dichloroethene (cis-1,2-DCE), PCE, TCE, toluene, and vinyl chloride.

2.2.3. Santa Clarita Valley Sheriff's Station

The Santa Clarita Valley Sheriff's Station is located at 23740 Magic Mountain Parkway and approximately 1,800 feet northeast of Well V201. This site is not considered to be a source of perchlorate, PCE, and TCE. However, gasoline and VOCs associated with

petroleum products have been documented in onsite soil and shallow groundwater due to leaking gasoline underground storage tank (UST). Organic compounds detected at significant concentrations in soil and/or groundwater at this site include gasoline-range hydrocarbons (TPHg), gasoline-related VOCs: benzene, toluene, ethylbenzene, xylenes (BTEX), and gasoline oxygenates and additives methyl tert-butyl ether (MTBE), tributyl alcohol (TBA), and tert-amyl methyl ether (TAME).

2.2.4. Other Potential Contaminant Sites

In addition to the active (open remediation) sites listed above, the contaminant assessment also listed other closed facilities located within the estimated capture zone of Well V201 that have impacted the soil and groundwater and have cases with either Department of Toxic Substances Control (DTSC) or Los Angeles Regional Water Quality Control Board (LARWQCB). Similar to Santa Clarita Valley Sheriff's Station, these sites are not considered to be the source of perchlorate, TCE, and PCE, however gasoline and VOCs associated with petroleum products have been documented. These potential contaminant sites, including their locations, activities, status, water quality results, and remedial actions, are listed in detail in Table 3-2 of the Well V201 Technical Memorandum provided in *Appendix B.*

2.3. Project Description

The Well V201 Treatment Facility is a groundwater treatment plant designed to treat up to 2,000 gallons per minute (gpm) of groundwater extracted from SCVWA's Well V201 for perchlorate and detected VOCs. The treatment facility is located on the south side of Valencia Boulevard, immediately west of Citrus Drive, in the City of Santa Clarita, California. The Well V201 treatment system consists of four bag filters, one GAC treatment train (with two vessels in parallel configuration), and one IX treatment train (with two vessels in lead-lag configuration), and one chloramination treatment system for disinfection. Treated water from the treatment facility will be delivered to North Valencia Zone 2 (formerly known as Zone IIA-North) pressure zone at a connection point located in the West Bound Lanes of Valencia Boulevard.

2.3.1. Well V201

Well V201 is located in a large 1.5-acre lot located west of the South Fork of the Santa Clara River. The well was drilled in 1989 using the mud rotary drilling method. The bore hole was drilled to a depth of 1690 feet below ground surface (bgs). An 18-inch diameter High Strength Low Alloy (HSLA) steel casing was installed from the ground surface to 392 feet bgs and an 18-inch diameter casing made of similar material was installed from 392 feet to 1220 feet bgs. A 42-inch diameter mild steel conductor casing was installed from ground surface to a depth of 50 feet. The well has a 338-feet deep annular seal filled with cement grout. It is also gravel packed and surface sealed. The well is perforated from 507 to 572, 588 to 633, 648 to 698, 713 to 748, 788 to 818, 859 to 909, 994 to 1019, 1074 to 1094, and 1104 to 1199 feet bgs, using an 18-inch diameter HSLA steel, ful-flo louvered casing with 0.065-inch slot opening. The total length of the screened interval is 415 feet. The well is equipped with a water lubricated

vertical turbine pump, which has a 600-horsepower (hp) electric motor with a pumping capacity of 2,000 gpm. The well is also equipped with the appropriate appurtenances such as an inverted, screened air relief valve, casing vent, flow meter, sounding tube, and sampling tap. More details on the well are provided on the well data sheet in *Appendix C*.

As mentioned above, Well V201 was voluntarily taken offline from service in 2010, when perchlorate was detected in the well at concentrations exceeding the MCL of 6 ug/L and have not run into the distribution since then. When the well resumed its operation in late 2017, with groundwater treated in an ion exchange system, water from this well was discharged directly into the storm drain under the NPDES permit. Well V201 was later taken offline in April 2021.

Water Quality of Well V201

In addition to perchlorate, other Title 22 constituents with primary and/or secondary MCLs and notification levels (NLs) that were detected from Well V201 at the levels above the DLRs include aluminum, arsenic, chromium, hexavalent chromium, fluoride, iron, uranium, gross alpha particle activity, nitrate, selenium, and dichloromethane. The concentrations of these detected constituents were below their respective MCLs and NLs. Besides these constituents, sulfate, nitrate, chloride, alkalinity, total dissolved solids (TDS), and total organic carbon (TOC) are the competing anions that can affect the performance of the IX resin and GAC media will need to be monitored closely. Table 2 summarizes the water quality monitoring results of data collected from January 2011 to November 2021 from Well V201.

Table 2: Well V201 Water Quality Data (2011 – 2021)

Constituents (Units)	California Limits		Range	Most Recent Sample	
	Level	Type		Sample Date	Result
Total Alkalinity (mg/L as $CaCO_3$)	--	--	200 – 620	11/9/2020	200
Perchlorate (mg/L)	6	MCL	ND – 16	4/21/2021	5.3
TCE (µg/L)	5	MCL	ND – 1.3	4/21/2021	ND
PCE (µg/L)	5	MCL	ND	11/9/2020	ND
Chloride (mg/L)	500	MCL	16 – 56	11/9/2020	35
Nitrate as N (mg/L)	10	MCL	3.2 – 4.1	11/9/2020	3.2
Sulfate (mg/L)	500	MCL	240 – 600	11/9/2020	370
TDS (mg/L)	500	MCL	270 – 1,200	3/24/2021	800

1. Maximum Contaminant Level
2. Notification Level

No PFAS compounds were detected at Well V201, except for PFHxS, which was detected in the fourth quarter of 2019, and first and second quarters of 2020 at 3.9 ng/L, 3.8 ng/L, and 3.6 ng/L, respectively. As of November 2025, the current notification and response levels for PFHxS are 3 ng/L and 10 ng/L, respectively.

Well V201 was sampled monthly for bacteriological quality analysis while the well was in service. According to the water quality records on file with the Division from 2002 to 2018, samples collected from the well which were analyzed for total coliform (TC) and

E. Coli were all tested negative, except for 2005 and 2007 where there was one TC positive for each year.

2.3.2. V201 Treatment Facility

The Well V201 Treatment Facility consists of four bag filter units, one GAC treatment train (with two vessels in parallel configuration), and one IX treatment train (with two vessels in lead and lag configuration). The construction plans for the treatment facility are provided in *Appendix D*. The process flow diagram and the treatment datasheets for GAC and IX treatment systems are provided in *Appendix E* and *Appendix F*, respectively. The treatment facility site is located within a block structure and is locked for security.

2.3.2.1. Bag Filters

Raw water from Well V201 will be pretreated with bag filters. There are two trains of two bag filter units per GAC train, for a total of four bag filter units manufactured by Filter Specialists, Inc. (FSI) installed upstream of the GAC vessels to remove fine particulates and extend the life of the GAC media. Each filter bag unit will house 10 Rosedale Products, Inc. polypropylene bag filters with a total capacity of 1,000 gpm. SCVWA will utilize either 10-micron or 25-micron FSI bag filters depending on operational need. The specifications of the filter house unit and bag filters, and the NSF 61 certification for the bag filters are provided in *Appendix G*.

Pressure gauges are installed on the inlet and outlet piping of the bag filter units to monitor the differential pressure across the units. The bag filter manufacturer recommends changing the filters when a differential pressure of 10 psi between the influent and effluent is reached.

2.3.2.2. Granular Activated Carbon (GAC) Treatment Process

2.3.2.2.1. GAC Vessels

SCVWA installed one dual-media HP1240-SYS GAC Adsorption System (HP1240-SYS System) manufactured by Evoqua. The HP1240-SYS System is pre-assembled and consists of two vertical pressure adsorber vessels, service piping, and a piping manifold for parallel operation. Service piping design includes an influent, effluent, backwash, air vent line, carbon fill, carbon removal, washdown line, and sampling connections. The piping manifold allows the carbon system to operate in forward and backwash flows while the piping system allows SCVWA to operate one vessel while the other vessel is being backwashed. Both GAC vessels have flush to waste capacity.

Each vessel has a diameter of 12 feet and side shell height of 14 feet and is designed to accommodate carbon capacity of approximately 40,000 lbs. per vessel for a total of 80,000 lbs. per system, with empty volume of 13,400 gallons or 1,368 cubic feet (ft^3). The vessels are designed to meet ASME Code with maximum pressure rating of 125 psig at 140°F. They are made of carbon steel, with Plasite 4110 vinyl ester interior coating, 35 mil of thickness. This coating, along with all components of the HP1240-SYS System, are certified to be in conformance with the specifications ANSI/NSF

Standard 61 for potable water application. The cut sheet and the ANSI/NSF Standard 61 documents for the HP1240-SYS System are provided in *Appendix H.*

Each vessel has three in-bed sample ports, which are located at 25 percent (%), 50%, and 75% of the bed depth from the top of the bed for withdrawing water samples during operation, to indicate progression of the adsorption zone and spent carbon. The specification of HP1240-SYS System is detailed in Table 3. The GAC Filtration Data Sheet is provided in *Appendix F.*

Table 3: Design Specification of HP1240-SYS System

Parameters	Specifications
Number of Vessels	1 Unit / 2 vessels per Unit
Vessel Material	Carbon steel
Vessel Diameter (feet)	12
Overall Vessel Height (ft)	Approx. 24.75
Operating Flow Range (gpm)	1,000
Minimum Flow (gpm)	250 (per vessel, parallel configuration)
Maximum Design Flow (gpm)	1,100
Vessel Volume (gal)	13,400
GAC Bed Volume (Typical) (ft^3)	1,368
GAC per Vessel (lbs)	40,000
Empty Bed Contact Time (EBCT) at 1,000 gpm	10.2 minute per vessel
Supports	Wide Flange Legs (4 units)
Process Piping	8-inch schedule 40 carbon steel
GAC Transfer Piping	4-inch schedule 40 carbon steel
Process Valves	Cast Iron Body, Stainless Steel Disk, and Gear Operator
GAC Valves	4-inch flange 316SS Ball Valve
Sample Ports	Effluent of GAC Vessel and on side shell at 25%, 50% and 70% of GAC bed depth
Pressure Relief Device	4-inch pressure relief valve with maximum working pressure of 125 psig at 140°F
Underdrain	8-inch schedule 40 carbon steel, epoxy-lined
Underdrain Screens	316L stainless steel, V-wired
Influent/Effluent Pressure Gauges	Bourdon Tube SS Pressure Gauges Model 232.53
Backwash & Change-out	Vessels to allow for backwash and spent GAC slurry change-out
Manway	20-inch diameter flanged at side shell
Concrete Foundation	Designed and constructed to current UBC

2.3.2.2.2. GAC Media

SCVWA has proposed to utilize Evoqua's AquaCarb 1240C GAC media. The media is ANSI/NSF Standard 61 compliant product. The specifications, NSF/ANSI certifications, and Material Safety Data Sheet for the GAC media are provided in *Appendix I*. The physical and chemical properties of these media are summarized in Table 4 below:

Table 4: Specifications for GAC media

Properties	Evoqua AquaCarb 1240C
Type	Coconut shell
PSD, U.S. Standard Mesh Size	12 x 40
Effective Size, mm	0.55 – 0.75
Iodine Number, mg/g	1,100
Abrasion Number, Wt. %	85
Uniformity Coefficient	1.9
Apparent Density, g/cc (tamped)	0.46-0.52
Water Soluble Ash, wt.%	2%

Treatment Process

In the parallel configuration, influent to the HP1240-SYS System flows downward through the carbon beds in both vessels. Both vessels receive the highest contaminant loading. When the carbon has exhausted, the vessel is removed from service for carbon change-out. After carbon change-out, the vessel is placed back into service.

Per the manufacturer's recommendation, the GAC system shall not be operated below 500 gpm to minimize the potential of channeling effect caused by insufficient pressure across the vessel. To achieve the 10.2 per minute per vessel EBCT, the GAC system shall not be operated more than 1,000 gpm with a GAC volume of 1,368 ft^3 per vessel.

Nitrate sloughing can occur during the GAC start-up and restart-up, and the concentration in the GAC effluent can reach as high as twice the influent concentration. Nitrate is detected at a low level from Well V201, less than half the MCL. To be conservative, nitrate samples will be collected from the well and GAC effluent once during the initial start-up and restart-up for verification. During the initial start-up and change-out, fresh carbon will be loaded into the vessels.

Backwash

After fresh carbon has been transferred into a GAC vessel and wetted, the carbon bed must be backwashed to size-segregate the carbon (larger particles at the bottom and smaller particles at the top) to reduce pressure drop, to remove any remaining air from the carbon bed, and to remove carbon fines which can lead to excessive pressure drop. Proper backwash after GAC media loading is also critical to properly stratify the media bed to prevent premature VOCs breakthrough. Potable water from the distribution system will be used to backwash the GAC vessels and redirected upwards under the carbon bed. A 50,000 gallons backwash waste tank, with dimensions of 40 ft x 20 ft x 15

ft (Length x Width x Height), will receive and hold the backwash waste. Two backwash waste pumps, one in duty and one standby, will be used to convey backwash waste from the tank to the sanitary sewer.

For Evoqua's AquaCarb 1240C GAC media, after fresh carbon has been loaded, the media will be soaked for 24 hours and backwashed following Evoqua's procedures. The backwash flow rate is approximately 680 gpm (at 55°F) to achieve 25 to 30 percent bed expansion. The backwash will take approximately 15 to 20 minutes or until the vessel effluent is clear. The backwash water will be collected in the 50,000 gallons backwash waste tank and pumped to the sanitary sewer. The backwash procedure is described in detailed in Section 4.12 of Evoqua's manual.

Forward Flush

As leaching of some chemicals can be expected after the media is loaded, after backwashing, flushing is required to reduce leaching to desirable levels. To ensure Evoqua's AquaCarb 1240C GAC media has been loaded properly, and nitrate sloughing and metal leaching are not a concern, SCVWA proposed to rinse the GAC media for 40 bed volumes (BV) at a flow rate of approximately 800 gpm before initiating the start-up sampling, which will be discussed in detail in Section 2.4.1 of this Report.

Backflush

In the event that the differential pressure drops across a GAC vessel increases to at least 20 psi, or there is a required temporary shutdown, backflush may be necessary. To perform backflushing, the flow rate is approximately at 8 gpm/ft^2 (880 to 900 gpm) for 1 to 2 BVs (25,000 to 50,000 gallons). The backflush procedure is described in Section 4.16 of Evoqua's manual. Backflush water will also come from potable water from the distribution system.

Estimated GAC Media Throughputs

The treatment system is designed to remove any detected VOCs from the water of Well V201. The treatment goal for VOCs is ND at the 50-percent (%) sampling port at both GAC vessels. The changeout criteria of the GAC media is any VOC detections at the 50% sampling port. The only current VOCs detection at the well is TCE, at levels range from ND – 1.3 µg/L.

Based on the breakthrough model for Evoqua's AquaCarb 1240V media (Figure 1), TCE is expected to break through after approximately 935 days, or 2.56 years, into operation. Breakthrough is defined as any VOC exceeding the DLR.

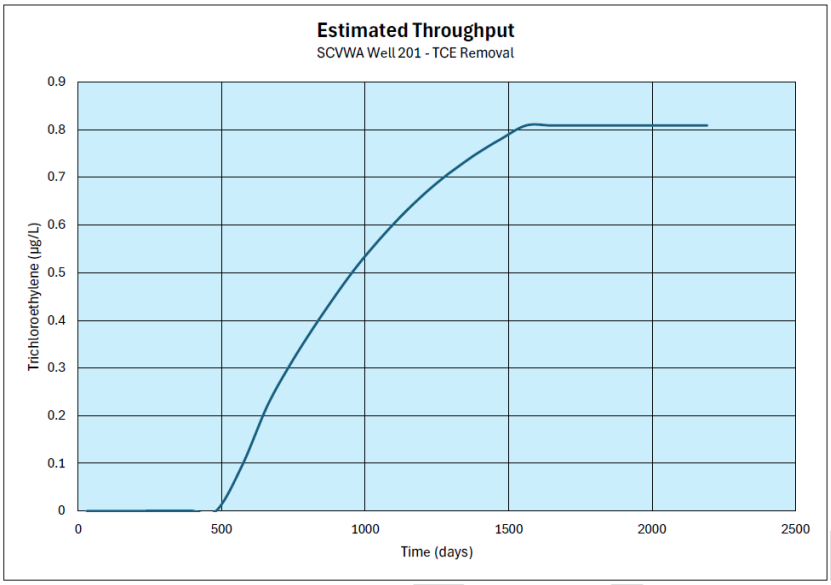

Figure 1. Evoqua's AquaCarb 1240V Media Estimated Breakthrough Curve

SCVWA has indicated that it will take up to 2-3 weeks (14-21 days) from scheduling the GAC change out to have the new GAC media loaded to the vessel. During the change-out, the vessel requiring GAC media change-out will be placed offline, while the other GAC vessel is kept online to keep the Well V201 treatment facility in operation. The flow from Well V201 will then be reduced to approximately 1,000 gpm. Considering that the laboratory turnaround time for VOC analysis is approximately 1 week (7 days), it will take approximately 5 weeks (35 days) from a second detection of VOCs is confirmed at the 50% sampling port to have the new GAC media installed.

2.3.2.3. Ion Exchange (IX) Treatment Process

2.3.2.3.1. IX Vessels

Two Evoqua HP1220HF pressure vessels have been installed. The HP1220HF are vertical cylindrical pressure vessels with elliptical tops and bottoms that are made of carbon steel. Each vessel is 12 feet in diameter, with a side shell height of 5 feet and an overall height of approximately 15 feet and 4 inches. These two vessels are valve manifolded to be operated in series (lead-lag configuration). The specification of the vessels is provided in *Appendix J*.

The vessels are ASME code stamped for a maximum working pressure of 175 psi at 150°F. The vessels are interior-lined with Plasite vinyl ester lining (Plasite 4110) and exterior-coated with epoxy primer and urethane coating. The ANSI/NSF certification for the Plasite 4110 interior coating is in *Appendix K*. Each vessel's underdrain system consists of eight septa screens of 316L stainless steel V-wire X-Box screens. The rated maximum capacity for the septa underdrain system is 2,000 gpm.

SCVWA can manipulate the valves on the pipe tree to flush-to-waste the lead vessel effluent, lag vessel effluent, and combined effluent (before chloramination). The pipe

tree's flush-to-waste line discharges into the 34-inch trench with grating via an air gap. All discharge pipelines are screened. The water is then discharged through underground pipeline which leads to onsite 20-inch storm drain.

NSF/ANSI 61 Compliance

- *Rupture Disks*

In Kennedy Jenks' letter (*Appendix L*) dated July 9, 2025, it stated that Type 316 stainless steel rupture disks manufactured by *Zook* will be installed on the inlets of the two IX vessels. However, these rupture disks are not NSF/ANSI certified products and are not in the process of certification.

Section 64593 (c)(2) of Title 22, California Code of Regulations states that unless directed otherwise by the State Board to ensure a pure and wholesome drinking water supply, a water supplier may use the following chemicals, materials, or products that have not been and are not in the process of being certified pursuant to Sections 64590 or 64591 if the material or product constructed of components meeting the requirements of sections 64590 or 94591.

Section 3.4, Annex C of NSF/ANSI 61 includes Table C1 that lists acceptable materials is not required to undergo extraction testing for material-specific analytes of interest. Type 316 stainless steel is listed specifically under Table C1.

In the letter dated July 9, 2025, Mr. Jeff Foray, P.E., Project Manager with Kennedy Jenks, certified that the rupture disks are constructed of Type 316 stainless steel and provided the product cut-sheet. Since Type 316 stainless steel is listed specifically under Table C1, the rupture disks meet the exemption criteria of testing in accordance with Section 3.4, Annex C of NSF/ANSI 61.

- *Expansion Joints*

Reportedly, the expansion joints were used to aid in the constructability of the IX system and to allow for some potential misalignment between the vessel and piping manifold. The expansion joints are manufactured by *General Rubber Corporation* and are NSF/ANSI 61 certified products. The specification and NSF/ANSI 61 certification for the expansion joints are provided in *Appendix M*.

2.3.2.3.2. IX Resins

SCVWA has decided to utilize strong base anion resin, PSR2 Plus™ from Evoqua, which is designed for selective removal of PFAS and perchlorate. The resin is ANSI/NSF Standard 61 compliant products. The specification and the ANSI/NSF certification for the resin is provided in *Appendix N*. The typical physical and chemical properties of the resins are summarized in Table 5.

Table 5: Properties of IX Resin

Product Name	Evoqua PSR2 Plus™
Functional Group	Complex Amino
Appearance	Beads
Physical State	Solid beads
Color	Yellow to Brown
Odor	Odorless to mild
Odor Threshold	No test data available
pH	Not Applicable
Melting point/freezing point	Not Applicable
Initial boiling point and boiling point range	No data
Flash point	Not applicable
Evaporation rate	No test data available
Flammability (solid, gas)	Not expected to form explosive dust-air mixture (literature)
Vapor pressure	Not Applicable
Vapor density	Not Applicable
Relative density	1.1 (Calculated)
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	≥ 500°C (≥ 932°F) (Literature)
Decomposition temperature	No test data available
Viscosity	Not Applicable
Explosive properties	No data available
Oxidizing properties	No data available

Both IX vessels will be loaded with 565 cubic feet (ft^3) of Evoqua PSR2 Plus™. The minimum resin bed depth is 24 inches over the top of the septa collectors with a usable bed depth of 32 inches. PSR2 Plus™ resin is strong base anion exchange resin (polystyrene divinylbenzene copolymer). This resin is specifically designed for selective removal of perchlorate from potable water. PSR2 Plus™ is a non-nitrate sloughing resin (the selectivity for nitrate is higher than for sulfate). Before loading, sterile virgin resin will be pre-rinsed by Evoqua at their Los Angeles resin handling facility for a minimum of 40 BV, utilizing proprietary techniques, to minimize the volume of water required for on-site rinse. The resin will then be loaded in sterilized sluice vehicles dedicated for potable use, delivered to the site, and then sluiced into each vessel.

The vessel itself has been designed to handle a maximum flow rate of 2,400 gpm. The treatment facility is designed to operate at a flowrate of 2,000 gpm. To reduce the potential risk of short circuiting the resin, a decrease in flow should not fall below a minimum gpm of 250 per vessel. The surface loading rate of each treatment vessel is approximately 17.70 gpm/ft^2 at 2,000 gpm. For the vessel filled with 565 ft^3 of Evoqua PSR2 Plus™ resin, the empty bed contact time (EBCT) is 2.11 minutes at the design flow rate of 2,000 gpm. The design operating conditions and characteristics are provided in Table 6.

Table 6: Design Operating Conditions and Characteristics

Characteristic	Values
Design Flow Rate	2,000 gpm per vessel
Maximum Flow Rate	For vessel: 2,400 gpm per vessel Per resin manufacturer: 2,036 gpm
Minimum Flow Rate	Per vessel: 250 gpm Per treatment process: 500 gpm
Surface Loading Rate	17.70 gpm/ft^2 per vessel (at 2,000 gpm)
Maximum Pressure	175 psig
Maximum Temperature	150^0F
Resin Content	565 ft^3 Evoqua PSR2 Plus™

ESTIMATED RESIN THROUGHPUTS – EVOQUA PSR2 PLUS™

The targeted treatment goal for the water entering the distribution system is below the DLR for perchlorate. Currently, the DLR is 1 µg/L for perchlorate. To meet the targeted treatment goals, SCVWA has proposed to replace the resin when perchlorate concentrations in the lead vessel effluent reaches the MCL of 6 µg/L. Once the perchlorate MCL is reached, SCVWA will schedule a resin change out with the vendor. During the change out, the lead vessel is taken offline for replacement of the spent resin. The feed water will be directed to the lag vessel to allow the treatment system to remain in service. The lead vessel is then pressurized with air. Water from the distribution system will be added to displace the spent resin as a slurry into a bulk transport trailer. Once the resin change-out has been complete, the vessel containing the new resin will be placed in the lag (polishing) position. Valving will be adjusted so that the former lag vessel will take the lead position. This ensures that the newest anion resin is always in the lag (polishing) position.

Using the input data provided by SCVWA, the input data and throughput curves generated by Evoqua are provided in Table 7 and Figure 2, respectively.

Table 7: Input Data For Evoqua PSR2 Plus™ Breakthrough Curves

Parameter	Unit	Value (Average)	Value (Max)
Operational Flow Rate	gpm	2,000	2,400
Operational Schedule	--	24/7	24/7
pH	--	7.66	8.2
Perchlorate	µg/L	<4	16
Chloride	µg/L	32.8	37
TCE	µg/L	<0.5	1.3
Nitrate as NO_3	mg/L	16.5	19
Sulfate	mg/L	452	530
Total Alkalinity as $CaCO_3$	mg/L	224	620
Total Dissolved Solids (TDS)	mg/L	841	1,200
Total Organic Carbon (TOC)	mg/L	ND	ND

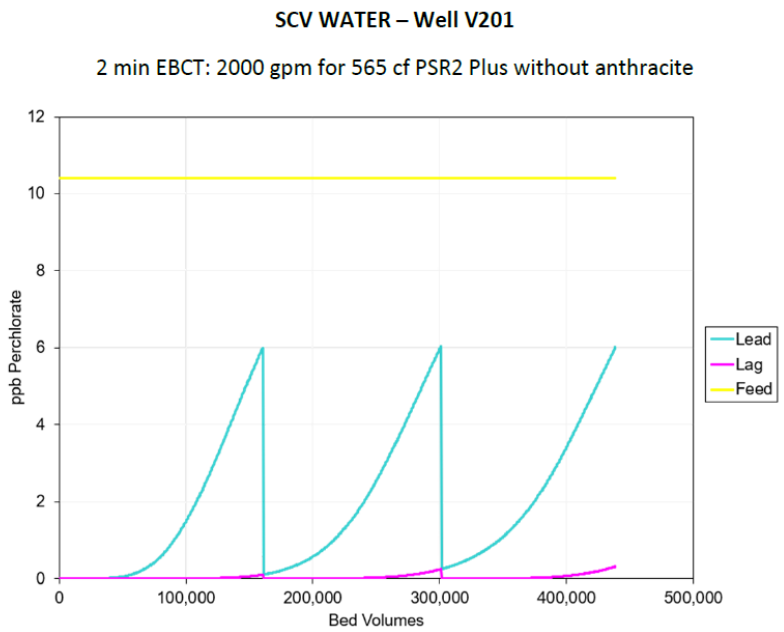

Figure 2: Breakthrough Curve for Perchlorate at the Lead Vessel

As shown in Figure 2, at approximately 175,000 BVs, perchlorate at the lead vessel effluent will approach 6 µg/L. At the lag vessel, perchlorate will remain below 1 µg/L. After resin changeout, the subsequent lead vessel (which was previously in the lag position) is predicted to treat approximately 125,000 BVs more (at approximately 300,000 BVs) before the perchlorate concentration at the effluent reaches 6 µg/L.

Resin Change-Out

Evoqua estimated that it will take two weeks (14 days) to three weeks (21 days) from the time a resin change-out order is placed to when the resin is delivered and loaded into a vessel. Considering the time SCVWA collects the samples and receives the test results from the laboratory that perchlorate concentration in the lead vessel effluent reaches 6 µg/L, the total time to complete the resin change-out process is approximately four weeks (28 days) to five weeks (35 days). Once the lead vessel filled with Evoqua PSR2 Plus™ resin is removed from service, based on the resin volume of 565 ft^3 and EBCT of 2.11 minutes, the lag vessel will treat up to approximately 19,109 BVs in 28 days, and 23,886 BVs in 35 days, respectively. Based on the breakthrough curves shown in Figure 2, the perchlorate concentration in the lag vessel in Well V201 will still be less than the DLR of 1 ng/L, respectively after treating an additional 19,109 BVs or 23,886 BVs.

Minimum and Maximum Flows

To minimize the channeling or short circuiting through the resin bed, both the minimum and maximum flow limits should be met. Evoqua indicated the flow should be maintained above 250 gpm for each IX and GAC vessels. The designed flow rate of Well V201 and the minimum flow rate for the GAC treatment system are 2,000 gpm,

and 500 gpm, respectively. With the GAC vessels in parallel configuration, the minimum flow rate shall not fall below 500 gpm per IX vessel.

In addition, Evoqua indicated that the maximum surface loading rate is 18 gpm/ft^2. With a surface area of 113.1 square feet per vessel, this corresponds to an approximate flow of 2,036 gpm per vessel. Since the pumping capacity of Well V201 is 2,000 gpm, it will not exceed the maximum flow requirement.

Performance Test Results

The performance test results after the initial GAC media and IX resin loading are included in *Appendix O*.

- Performance tests after initial GAC media loading

[To be added when SCVWA conducts the initial performance test]

- Performance tests after initial IX resin loading

[To be added when SCVWA conducts the initial performance test]

2.3.2.4. Disinfection Facility

The effluent from the IX treatment system will receive chloramination treatment using the chlorine and ammonia feed systems at the V201 treatment facility site to form chloramines. The target disinfectant residual for the finished water entering the distribution system is 3.0 – 3.5 mg/L as total chlorine. Chlorine and ammonia will be added at a 5 to 1 ratio. This ratio is monitored through SCADA set-points.

Bulk disinfecting chemicals, including liquid ammonium sulfate solution and sodium hypochlorite solution, will be delivered. The sodium hypochlorite and liquid ammonia sulfate (LAS) storage tanks are housed inside a concrete masonry unit (CMU) building with a metal roof and a concrete containment wall at the entry with metal stairs for access, which includes an electrical room and HVAC equipment to provide adequate ventilation. The two storage tanks are placed in two rooms separated by a CMU wall. The chemical feed systems are supplied by Cortech and manufactured by Milton Roy. The Chloramination Data Sheet is provided in *Appendix P*.

NSF/ANSI 61 Compliance

In Kennedy Jenks' letter (*Appendix Q*) dated October 20, 2025, it stated that both sets of mRoy Model A chemical metering pumps used for the addition of sodium hypochlorite and liquid ammonium sulfate were selected to meet the design flow and head conditions at this site. However, both chemical metering pumps are not NSF/ANSI 61 certified products, and neither product is in the process of certification. There are also no

equivalent products currently on the market that are certified for NSF/ANSI 61 (or in the process of certification) that meet the design conditions.

Section 64593 (c)(2) of Title 22, California Code of Regulations states that unless directed otherwise by the State Board to ensure a pure and wholesome drinking water supply, a water supplier may use the following chemicals, materials, or products that have not been and are not in the process of being certified pursuant to Sections 64590 or 64591 if the material or product constructed of components meeting the requirements of sections 64590 or 94591.

Section 3.3.2 of NSF/ANSI 61 states that products, components, or materials made exclusively from materials from Table 3.1 of NSF/ANSI 61 shall not require testing if:

- Their diluted surface area in the application in less than 0.001 or 0.0001 for static or flowing conditions respectively, or

- The material is in a high flow device and used exclusively at public water treatment facilities. For the purposes of this section, high flow devices are limited to chemical feeders, disinfection generators (e.g., chloride dioxide, hypochlorite, ozone, and ultraviolet), electrodialysis technologies, microfiltration technologies, nanofiltration technologies, reverse osmosis, and ultrafiltration technologies.

In the letter dated October 20, 2025, Mr. Stephen M. Diamond, P.E., Project Manager with Kennedy Jenks, certified that both sets of mRoy Model A chemical metering pumps meet the second criteria as chemical feeders. The wetted materials consist of PVC and PVDF liquid end heads, and the PTFE diaphragms are listed in Table 3.1 of NSF/ANSI 61. Since both chemical metering pumps are chemical feeders that are specifically listed as high flow devices under Case 2 above and they are used exclusively at a public water system, both metering pumps meet the exemption criteria for testing in accordance with Section 3.3.2 of NSF/ANSI 61.

2.3.2.4.1. Sodium Hypochlorite Storage and Feed System

SCVWA will utilize a 12.5 percent sodium hypochlorite solution. The hypochlorite feed system includes two metering pumps, each with a maximum capacity of 5.5 gallons per hour (gph) and a 3,000-gallon fiber-reinforced plastic (FRP) storage tank. The ANSI/NSF 60 certification for the sodium hypochlorite solution is provided in *Appendix R*.

Two mRoy A Series mechanically actuated & flat diaphragm metering pumps will be utilized to feed the sodium hypochlorite (one on duty and one standby). Based on the maximum flowrate through the IX treatment system, each mRoy metering pump can dose up to 5.72 mg/L of sodium hypochlorite.

Maximum chlorine dose = (125,000 ppm x 5.5 gal/hour x 24 hours/day)/ (2,000 gpm x 1,440 min/day) = 5.72 mg/L

The operation of the chemical metering pumps will be controlled by Allen Bradley VFDs. The chemical will be injected into the discharge pipe downstream of the IX vessels before the 12-inch diameter static mixer, at the opposite site of the liquid ammonium sulfate injection port. In addition to the online chlorine analyzer, the operator will collect a grab sample daily for total chlorine residual analysis and compare the grab sample result with the on-line analyzer reading, to verify the accuracy of the on-line analyzer. This test is performed using a HACH SL 1000 Portable Parallel Analyzer (PPA) Colorimeter.

2.3.2.4.2. Liquid Ammonium Sulfate (LAS) Storage and Feed System

The LAS system includes two mRoy A Series metering pumps, one on duty and the other on standby, each with a maximum capacity of 1.5 gph and a 650-gallon FRP storage tank. The 40 percent liquid ammonium sulfate is supplied by Hill Brothers Chemical Company. The ANSI/NSF 60 certification and specification of the liquid ammonium sulfate is provided in *Appendix S*. Based on the maximum flowrate through the IX treatment system, each pump can dose up to 5.0 mg/L of ammonia.

Maximum ammonia dosage = (400,000 ppm x 1.5 gal/hour x 24 hours/day)/ (2,000 gpm x 1,440 min/day) = 5.0 mg/L

The operation of the metering pumps is flow paced with feedback control loop provided by the Allen Bradley VFDs. When a chemical injection pump turns on, the initial dosing rate will be set based on the flowrate measurement data from the flow meter. After that, adjustments to the pump speed will be provided based on the total chlorine residual measured by the chlorine analyzer. The system will be monitored through SCADA to ensure a minimum of 1.0 mg/L total chlorine in the finished water. The Electro Chemical Devices (ECD) Model TC80 online chlorine analyzer will be used to continuously read the total chlorine in the finished water. The specification of the ECD Model TC80 chlorine analyzer is provided in *Appendix T*.

2.4. Water Quality Monitoring

2.4.1. Start-up Monitoring

2.4.1.1. Well V201

Bacteriological Quality

Samples of total coliform, *E. coli* and temperature were collected during startup on [Sampling date - TBD] at Well V201 and [Results to be added when SCVWA conducts the initial performance test]. The lab report for the sampling is included in *Appendix U*.

Title 22 Chemicals

On [Sampling date - TBD], SCVWA collected samples from Well V201, for Title 22 chemicals, as part of the Vulnerability Assessment and Monitoring for the 1st Period of the Fourth Compliance Cycle.

SCVWA shall monitor for Well V201 in accordance with Title 22, Chapter 15, California Code of Regulations (CCR) and the Division's most recent Vulnerability Assessment and Monitoring Frequency Guidelines (VAMFG). Based on the water quality results, the source class code for Well V201 is [TBD]. shall review the monitoring requirements for source class [TBD] and sample accordingly during the 2023-2025 Compliance Monitoring Period. *Appendix V* provides for the most recent VAMFG for [TBD] source class and the Waiver Certificate for the 2023-2025 Monitoring Period. In addition to the monitoring required by Title 22, Chapter 15, CCR, SCVWA also needs to conduct any additional monitoring requirement specified in this permit.

2.4.1.2. Treatment Systems

Table 8 summarizes the start-up monitoring proposed by SCVWA. During start-up, the raw water from Well V201 will be monitored for perchlorate, VOC, total coliform (TC), HPC, nitrate, chloride, sulfate, TOC, specific conductance (EC), TDS, alkalinity, and nitrosamines. The GAC vessels will be monitored for VOCs, nitrate, arsenic, antimony, iron, manganese, aluminum, nickel, uranium, pH (when the GAC media in used is not an acid-washed type), TC, and HPC. The IX lead vessel will be monitored for perchlorate, VOCs, nitrosamines, and toluene. The IX lag vessel will be monitored for perchlorate, TC, HPC, toluene, nitrate, chloride, sulfate, TOC, TDS, EC, and alkalinity, and nitrosamines. The finished water after chloramination will be monitored for TC, HPC, and nitrosamines.

Table 8: Monitoring Plan for Well V201 Treatment Facility Start-Up

Type, Sample Location, & PS-Code	Constituents	Frequency
Raw (Well V201, CA1910240_020_020)	Perchlorate, VOC, Pressure, Flow Rate, Total Coliform (TC) & HPC, Nitrate, Chloride, Sulfate, TOC, EC[1], TDS, Alkalinity[2], Arsenic, pH[3], and Nitrosamines	30 Minutes After Start-Up
GAC Vessel #1 Effluent (CA1910240_154_154) GAC Vessel #2 Effluent (CA1910240_156_156)	VOCs, Nitrate, Arsenic, Antimony, Iron, Manganese, Aluminum, Nickel, Uranium, pH[3], and TC & HPC	After 40 BV[4] Flushing
IX Lead Vessel Effluent (CA1910240_157_157)	Perchlorate, VOCs, Nitrosamines, and Toluene	30 Minutes After Start-Up
IX Lag Vessel Effluent (CA1910240_158_158)	Perchlorate, Pressure, Flow Rate, TC & HPC, Nitrate, Chloride, Sulfate, TOC, EC[1], TDS, Alkalinity[2], Toluene, and Nitrosamines	
Finished Water After Chloramination (CA1910240_159_159)	TC & HPC, and Nitrosamines	

1. Specific Conductance.
2. Alkalinity = Bicarbonate, carbonate, hydroxide alkalinity.
3. Monitor for pH when the GAC media is not an acid-washed type.

4. Bed Volume

2.4.2. Routine Monitoring

SCVWA must conduct compliance monitoring as well as monitoring to evaluate the performance of the treatment processes. Additional details must be provided in an OMMP approved by the Division. Monitoring is subject to the Division's review and approval. All analytes must be sampled with Drinking Water Methods that meet those specified in Title 22, CCR, Section 64415 (Laboratory and Personnel), Title 22, CCR. Unregulated chemicals must be monitored with methods approved by the Division. The routine monitoring schedule is provided in Table 9.

Table 9: Routine Monitoring Schedule

Type	Constituents	Frequency
Raw (Well V201, CA1910240_020_020)	Pressure and Flow Rate	Weekly
	Perchlorate, VOCs, Total Coliform (TC) & HPC, Nitrate, Chloride, Sulfate, TOC, TDS, EC[1], and Alkalinity[2],	Monthly
	PFAS[3]	Quarterly
	SOCs, NLs[4], inorganics (except perchlorate), TICs, Hydrocarbons[5], Explosives[6], and, Radiological	Annually[7]
GAC Vessel #1 – 50% Port Effluent (CA1910240_154_153) GAC Vessel #2 – 50% Port Effluent (CA1910240_156_155)	VOCs	• **Monthly:** if the concentration of any VOCs is below the DLR[8] at the 50% sampling port. • **Weekly:** if the concentration of any VOCs exceeds the DLR[8] at the 50% sampling port.
GAC Vessel #1 Effluent (CA1910240_154_154) GAC Vessel #2 Effluent (CA1910240_156_156)	TC & HPC	Monthly
IX Lead Vessel Effluent (CA1910240_157_157)	Perchlorate and VOCs	Weekly
IX Lag Vessel Effluent (CA1910240_158_158)	Perchlorate and VOCs	Weekly
	TC & HPC, Nitrate, Chloride, Sulfate, TOC, TDS, EC[1] and Alkalinity[2]	Monthly
	PFAS[3]	Quarterly
Finished Water After Chloramination (CA1910240_159_159)	TC & HPC	Monthly

1. Specific Conductance.

2. Alkalinity = Bicarbonate, carbonate, hydroxide alkalinity.
3. Analyzed according to the analytes list, Storet codes, and method specified by the Division.
4. NLs = chemicals that currently have notification levels established. See Appendix Z for the list of chemicals.
5. Includes Total Petroleum Hydrocarbons (TPH), TPH (gasoline fraction), and TPH (diesel fraction).
6. Includes HMX, RDX, and 2,4,6-TNT.
7. Eligible for reduced monitoring upon request from SCVWA and review by the Division after SCVWA submitting substantiating data from long-term operation of Well V201 treatment facilities and all surveillance wells.
8. DLR = Detection Limit for Purposes of Reporting.

2.4.3. Monitoring after Change-out

2.4.3.1. GAC Media

According to the OMMP, all carbon bed replacement will be conducted by the manufacturer. SCVWA will initiate the media changeout for the vessels when any VOCs exceed the DLR at the 50% sampling port in two consecutive samples, or every three to five years of service, whichever occurs first, depending on the GAC media manufacturers.

2.4.3.2. IX Resin

After the resin has been exhausted, SCVWA will contact the resin manufacturers for a change-out. After change-out, the raw water from the Well V201 will be monitored for perchlorate, total coliform, HPC, nitrate, chloride, sulfate, TOC, TDS, alkalinity, and nitrosamines. Both the lead and lag vessels will be monitored for perchlorate, nitrosamines, and toluene. The lag vessel will also be monitored for nitrate, chloride, sulfate, TOC, TDS, and alkalinity. The finished water (after chloramination) will be monitored for total coliform, HPC, and nitrosamines. SCVWA will also record the pressure and flow rate at the well discharge line of the Well V201. These samples will be collected 30 minutes after resin change-out.

Action Plan for Total Coliform and HPC

When any sample collected during the start-up or routine monitoring tested positive for TC or has HPC greater than 500 CFU/mL, the following action plan will be implemented.

- If there is a TC positive or HPC greater than 500 CFU/mL in the raw water, the well will be removed from service. The well will be flushed to waste and repeat samples will be collected. Once the sample results are TC negative and HPC are less than 500 CFU/mL, the well will be placed back into service.
- If a TC positive or HPC greater than 500 CFU/mL is detected at either the GAC vessel effluent, IX lag vessel effluent, or in the finished water (after chloramination), the treatment facility will be removed from service and pumped to waste. Investigative monitoring will be triggered: TC and HPC samples will be collected at the well, GAC vessels, IX lead and lag vessels, and at the finished water effluent. If the subsequent sample results yield TC negative and HPC less than 500 CFU, normal routine monitoring will resume, and the treatment facility will be placed back into service. If any sample confirms the initial positive, the following actions will be taken based on these follow up samples.

- Positive from a well – refer to first bullet point regarding raw water monitoring.
- Positive from a GAC treatment vessel – the vessel will be flushed with raw well water until repeat samples are absent for TC and HPC are less than 500 CFU/mL. If flushing does not yield desired results, SCVWA will contact the GAC provider to perform disinfection of the GAC media in accordance with AWWA Standard ANSI/AWWA C653-97.
- Positive from an IX treatment vessel – the vessel will be flushed with raw well water until repeat samples are absent for TC and HPC are less than 500 CFU/mL. If flushing does not yield desired results, a resin change-out will be scheduled for the affected vessel(s).
    - While strong acids such as peracetic acid or hydrogen peroxide can be used to disinfect the resin, it is not a recommended solution (as stated above). If SCVWA finds the need to use peracetic acid or hydrogen peroxide to disinfect, SCVWA will follow manufacturers' guidelines and will work with the Division's staff to accomplish disinfection.

- The GAC and IX treatment systems will not be placed back into service until all monitoring yields TC negative and HPC less than 500 CFU/mL.

2.4.4. Disinfection Facility

In addition to the on-line analyzer, the operator will collect daily grab sample from the effluent of the facility (finished water) to verify the on-line analyzer readings and ensure the analyzer is working properly.

2.4.5. Groundwater Surveillance Monitoring Network

There are three monitoring well clusters from the existing groundwater monitoring wells are proposed to be included in the network of surveillance monitoring wells for Well V201: DW-1 (DW-1A, DW-1B, and DW-1C), Library Wells (Library A, Library B, and Library C), and Mall Wells (Mall A, Mall B, and Mall C). DW-1 Wells are cross-gradient of V201, while Library Wells are upgradient and Mall Wells are downgradient of V201. In addition, water supply well such as Well V205, will also provide data that are relevant to the Saugus Formation and nearby to Well V201. Table 10 below outlines the well construction data for these surveillance wells and the estimated time travel from the monitoring wells to Well V201. These surveillance monitoring wells for Well V201, including their specification and water quality results, are described in detail in the Well V201 Technical Memorandum provided in *Appendix B* and the Containment Evaluation for Whittaker-Bermite Contaminant Plume provided in *Appendix W.*

Table 10: Surveillance Wells Construction Data

Well	Borehole Depth (ft bgs)	Screened Interval (ft bgs)	Year Installed	Estimated Time Travel*
DW-1A	1,303	780 – 800	November 2012	Approx. 7 years

Well	Borehole Depth (ft bgs)	Screened Interval (ft bgs)	Year Installed	Estimated Time Travel*
DW-1B		985 – 1005		
DW-1C		1,180 – 1,200		
Library A	1,065	662 – 642	November 2015	Approx. 4 years
Library B		722 – 742		
Library C		832 – 852		
Mall A	1,200	785 – 805	October 2015	< 2 years
Mall B		885 – 905		
Mall C		1,070 – 1,090		

* Estimated time travel based on an effective porosity of 0.1 which is commonly used in medium-grained sediments to represent contaminant transport velocities and travel distances during any given duration of time.

SCVWA currently retains an outside vendor, Blaine Tech, to collect the samples at these monitoring wells. Table 11 shows the monitoring requirements at monitoring wells, with additional monitoring for this monitoring well for the initial stage of operation.

Table 11: Routine Monitoring Schedule for Monitoring Wells

Constituents	Frequency[1]	
	Wells DW-1A, B, and C	Wells Library A, B, and C, and Mall A, B, and C
Perchlorate	Quarterly	Quarterly
VOCs	Quarterly	Quarterly
SOCs	Annual	Annual
General Mineral/General Physical	Annual	Annual
Inorganics (excludes asbestos)	Annual	Annual
Radiological	Annual	Annual
Hydrocarbons[2]	N/S[3]	Annual
Explosives[4]	N/S[3]	Annual

1. Eligible for reduced monitoring upon request from SCVWA and review by the Division after SCVWA submitting substantiating data from long-term operation of Well V201 treatment facilities and all surveillance wells.
2. Includes Total Petroleum Hydrocarbons (TPH), TPH (gasoline fraction), and TPH (diesel fraction).
3. N/S = not sampled
4. Includes HMX, RDX, and 2,4,6-TNT

In addition to the monitoring schedule included in Tables 9 and 11, the constituents identified at the potential contaminating sites located within the 15-year capture zone of Well V201 are required to be monitored at both Well V201 and all surveillance wells (Wells DW1A, B, and C, Library Wells A, B, and C, and Mall Wells A, B, and C) as listed in Table 12. SCVWA sampled Well V201 and all the surveillance wells for these constituents on [Sampling date - TBD] and [Results to be added when SCVWA conducts the initial performance test]. The lab report for the sampling is included in *Appendix U*.

Table 12: Additional Monitoring Associated with Potential Contaminating Activities Within the 15-year Capture Zone

Constituents	Frequency[1]

	Well V201	All Surveillance Wells[2]
Acetone	Annual	Annual
Carbon Disulfide	Annual	Annual
Chlorate	Annual	Annual
Chloroethane	Annual	Annual
Chloromethane	Annual	Annual
Chloroform	Annual	Annual
Ethanol	Annual	Annual
Ethyl tert-butyl ether (ETBE)	Annual	Annual
Methyl n-Butyl Ketone (MBK)	Annual	Annual
Methyl ethyl ketone (MEK)	Annual	Annual
Methyl isobutyl ketone (MIBK)	Annual	Annual
Tert-amyl methyl ether (TAME)	Annual	Annual
Tert-butyl alcohol (TBA)	Annual	Annual

1. Eligible for reduced monitoring upon request from SCVWA and review by the Division after SCVWA submitting substantiating data from long-term operation of Well V201 treatment facilities and surveillance wells.
2. Wells DW1A, B, and C, Library Wells A, B, and C, and Mall Wells A, B, and C.

2.5. Operation and Maintenance

An Operation, Maintenance, and Monitoring Plan (OMMP) dated November 2025 for the V201 Treatment Facility is provided in *Appendix B*. The draft OMMP outlines the proposed operations at V201 Treatment Facility. The plan has eight sections – Introduction, SCVWA Organization and V201 Treatment Facility Staffing, Water Treatment Facilities, Unit Process Operations and Procedures, Performance Monitoring and Optimization, Maintenance Program, Reliability, and Records and Reporting. The System Process includes information regarding the system description, operating conditions, and operating changes. The Start-up Procedures section includes safety protocol, operating plan, disinfection, backwash, spent resin removal, resin sluicing procedure for new and spent resin. The Shutdowns and Emergency Procedures section includes temporary and extended shutdowns, and emergency procedures. The Maintenance section includes minor and major maintenance. The Daily Operations and Maintenance section includes pre-filter maintenance and SCADA information. The Monitoring section includes monitoring schedules, action plan for bacteriological activity and HPC, metals monitoring when GAC media is loaded, and nitrosamine monitoring when resin is loaded.

Operators will visit the Well V201, GAC and IX treatment systems, and the disinfection facility daily including weekends and holidays. The daily inspection and maintenance include visual check of pressure gauges, adjustments to valves and regulators, leakage by tightening flanges and connections, flow verification, and site security. All operations of the well and treatment equipment of Well V201 Treatment Facility are controlled and monitored by a SCADA system. SCVWA's operators will receive alarms if an issue arises with the well, GAC System, IX System, or the disinfection facility. Operators will investigate and provide corrective action (if necessary) to remedy the SCADA alarms. In addition, SCVWA staff will periodically check the well, GAC and IX Systems, and the

disinfection facility through SCADA to verify everything is operating correctly. Under normal operation, the Well V201 Treatment Facility is expected to be operated continuously and be monitored remotely 24 hours a day, 7 days a week by the operator.

SCVWA shall submit an updated OMMP for the Well V201 Treatment System within 120 days after the issuance of this permit amendment to incorporate the conditions specified in this permit amendment and the necessary operational changes based on the lessons learned during the initial start-up and routine operation of the treatment facility.

2.5.1. Reliability – Alarms

Although the Well V201 Treatment Facility has been designed to operate without a full-time operator present, the SCVWA's operators will monitor the treatment facility routinely to ensure proper operation. Plant operations can be remotely monitored from outside the Well V201 Treatment Facility, but changes cannot be made remotely. A list of safety alarms is summarized in Table 13 below. If an issue arises, operators will receive an alarm via email and text message and will respond accordingly to resolve the issue.

Table 13: List of Alarms and Triggers for the Well V201 Treatment Facility

Alarm	Alarm Triggers
GAC Treatment Facility	
High Differential Pressure for Prefilter 1 (psi)	> 15
High Differential Pressure for Vessel 1 (psi)	> 25
High Differential Pressure for Vessel 2 (psi)	> 25
High Flow for Vessel (gpm)	1,100
Low Flow for Vessel (gpm)	300
IX Treatment Facility	
High Differential Pressure for Prefilter 1 (psi)	> 15
High Differential Pressure for Vessel 1 (psi)	> 25
High Differential Pressure for Vessel 2 (psi)	> 25
High Flow for Vessel Set 1 (gpm)	2,000
Low Flow for Vessel Set 1 (gpm)	500
Disinfection Facility	
High Chlorine Residual (mg/L)	> 4.00
Low Chlorine Residual (mg/L)	< 1.00
High Chlorine Tank Level (%)	> 90
Low Chlorine Tank Level (%)	< 30
High Ammonia Tank Level (%)	> 90
Low Ammonia Tank Level (%)	< 30

2.5.2. Monthly Reports

A monthly performance report of the V201 Treatment Facility must be submitted to the Division by the 25th day of the following month. SCVWA has included the monthly treatment report template in the OMMP. At a minimum, the report must include:

- A summary of analytical results, including competing anions, and nitrosamines, received by the water system in the reporting calendar month.
- A summary of the bacteriological quality of water.
- A summary of the GAC and IX system records, which includes:
    - Daily operation, time of use and production of well V201.
    - Volume treated prior to replacement of media and resin for each vessel.
    - Daily minimum and maximum disinfectant residual of the effluent of the treatment facility.
    - A summary of both scheduled and unscheduled interruption events.

2.5.3. Treatment Plant Classifications and Operator Certification

The Operator Certification Regulations of Title 22, CCR, establishes treatment facility and distribution system classifications based upon influent water characteristics, treatment processes, and flow rates. Based on this combination of factors, the V201 Treatment Facility is classified as a T2 treatment facility. The treatment classification worksheet is provided in *Appendix X*. Therefore, any operator designated as the chief operator of the treatment facility must hold at least a valid T2 certificate, and any operator designated as the shift operator must hold at least a valid T1 certificate.

SCVWA has an adequate number of trained and certified treatment operators to operate the V201 Treatment Facility. The list of chief and shift treatment operators is provided in *Appendix B*.

3. APPRAISAL OF SANITARY HAZARDS AND SAFEGUARDS

3.1. California Environmental Quality Act (CEQA)

SCVWA is the lead agency for the Well V201 Treatment Facility Project under California Environmental Quality Act (CEQA). SCVWA has filed and submitted the Notice of Exemption (NOE) to both the Los Angeles County Registrar-Recorder/County Clerk Office and the Ventura County Clerk and Recorder Office on November 24, 2021 (*Appendix Y*). The project was categorically exempt under Class 3 (New Construction or Conversion of Small Structures).

The project was categorically exempt under Class 1, pursuant to California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Article 19, Section 15301, Class 1 (Minor Alterations to Existing Facilities), and Section 15303, Class 3 (New Construction or Conversion of Small Structures). The project qualifies for an exemption under Class 1 because it is a minor alteration of an existing public facility and it concerns proposed new mechanical equipment involving negligible or no expansion of use, i.e., no additional extraction of water, beyond the existing at the time of the lead agency's determination.

As the responsible agency, the Division will file the NOE for the Well V201 Treatment Facility through the State Clearinghouse within five days after the issuance of this permit amendment.

3.2. Evaluation of Process Memo 97-005 Submittal

The Division issued the original Policy Memo 97-005 on November 5, 1997, as a policy guidance for direct domestic use of extremely impaired sources. The Policy Memo 97-005 was revised on September 21, 2020 (SWRCB-DDW, 2020). The purpose of the Revised Process Memo 97-005 is to set forth the process and principles by which the Division would evaluate the proposals, establish appropriate permit conditions, and approve the use of an extremely impaired source for direct potable use.

Technical Reports to address the elements of the Process Memo 97-005 have been submitted by SCVWA to the Division dated August 2019, December 2022, and February 2025. Evaluation of the 97-005 submittals is as followed:

3.2.1. Drinking Water Source Assessment and Contaminant Assessment

This section includes discussion of Drinking Water Source Assessment (SA) and Contaminant Assessment (CA), based on Step 1 of 97-005 Evaluation Report submitted by SCVWA.

The SA section provides an assessment of the physical boundaries and chemical characteristics of groundwater that may flow to and be pumped by the production wells. The assessment delineates the groundwater capture zone and identifies origins of contaminants found in the source water, predicts contaminant trends, and possible contaminating activities (PCA) within the capture zone.

The purpose of the CA is to provide a characterization of the contamination of soils and groundwater at and around the contamination and former contamination sites located within the long-term capture zone or watershed areas of the drinking water source. Relevant investigations, cleanup, and monitoring wells are discussed as well as regulated and non-regulated chemicals.

For the CA, all contaminants with potential health effects must be identified and considered. The project applicants must also identify the list of contaminants of concern and the potential contaminants of concern for the proposed drinking water sources. The contaminant concentration ranges ascertained in the CA are used in the subsequent step of estimating the concentration of contaminants at the inlet of the proposed treatment equipment. If contaminants are found to be detectable at the production wells, their treatability must be evaluated to see if they can be removed.

The following is the condensed information from the detailed discussions in the 97-005 report (*Appendix B*). The addendum is also discussed.

Groundwater modeling was used to create the capture zones for Well V201 and sites with documented or potential pollutant discharges within the capture zones were identified. As Well V201 extracts water from the Saugus Formation, the only site that could potentially impact the water quality was identified to be the former Whittaker-Bermite site. Well V201 is perforated exclusively in the Saugus Formation starting at

540-570 ft below ground surface with ten depth-discrete perforated intervals. The available data indicate that V201 has not been impacted by chemical releases from other sources located west of Saugus 1 and Saugus 2.

Capture zones for the 2-, 5-, 10-, and 15-year travel time were delineated using a regional groundwater model developed for the Santa Clarita Valley. The model was developed in 2003, updated in 2014, and validated through 2011. The model has eight layers and simulates processes including groundwater pumping, surface recharge, recharge from Santa Clara River, underflows, and discharge to the Santa Clara River. The capture zones predict that most of the water flown to Well V201 is from the Saugus Formation, and little to no flow is predicted to flow from the Alluvial Aquifer. Data from pumping tests indicate that there is a lack of hydraulic communication between Well V201 in Saugus Formation and alluvium water bearing unit.

In addition to perchlorate, TCE has been detected at Well V201 at concentrations between 0.5 and 1.3 µg/L. PCE was not detected at V201 during full time operation between 2018 and 2021. The Whittaker-Bermite site, a former explosives manufacturing facility located upgradient of Well V201. The facility is known to have perchlorate and VOCs in soils and underlying aquifers. VOCs including TCE and PCE are present in some of the proposed upgradient monitoring wells for V201. Wells Saugus 1 and 2 are upgradient of V201 and have similar screened intervals producing water from the Saugus Formation. These wells are also impacted by perchlorate and VOCs, hence are considered indicators of future impacts to Well V201. The primary VOCs detected in Saugus 1 and 2 wells are TCE and PCE. TCE and PCE are present in the Saugus Formation upgradient, cross gradient, and downgradient of Well V201. TCE appears to be co-located with perchlorate in the Saugus Formation. Based on data collected from Saugus 1 and Saugus 2 wells, an increase in perchlorate concentrations moving to V201 is not anticipated.

3.2.2. Full Characterization of Raw Water Quality

The end product of this step is to characterize the quality of the water that will be fed into the treatment system, so that the treatment system is properly designed. This should include an evaluation of all the contaminants found present in the CA and whether they are or will eventually appear at the production or extraction wells and plant influent (SWRCB-DDW, 2020, p. 8).

The following is the condensed information from the detailed discussions in the 97-005 report (*Appendix B*).

Various data sources were used for the raw water quality characterization including Water Quality Monitoring (WQM) compliance database and data from VWD (now SCVWA). Water quality data from Well V201 between 1985 and 2021 was reviewed and summarized. Descriptive water quality summary tables were developed for Well V201 for various analytical groups. Water quality data were evaluated for the duration prior to the well shutdown as well as during operation between 2017 and 2021. The first detections of perchlorate in Well V201 occurred in 2010 with a maximum of 16 ug/L.

TCE was first detected in Well V201 in 2017 with a maximum of 1.3 ug/L. Perchlorate concentrations post startup operations in 2017 ranged from 6.7 ug/L to 8.4 ug/L. The maximum perchlorate concentration between 2017 and 2021 was 18 ug/L. TCE was the only VOC detected in V201 between 0.5 ug/L and 1.3 ug/L. Reviewing the variability of perchlorate concentrations over time indicates that although there have been fluctuations, perchlorate concentrations are likely to remain relatively stable. Sampling results from 2019 using EPA Method 537 showed no detections of PFOS and PFOA. PFHxS was detected at a maximum of 3.9 ng/L. Other constituents evaluated include sulfate, specific conductance, and total dissolved solids which the secondary MCLs have been exceeded at Well V201.

3.2.3. Drinking Water Source Protection

Pursuant to Process Memo 97-005, for an extremely impaired source to be used as an approved drinking water supply, there needs to be a program in place to prevent the level of contamination from rising and to minimize dependence on treatment for contaminant removal.

The 97-005 Report submitted by SCVWA to address this step (*Appendix B*) provides the following information related to the various remediation programs, cleanup actions, mitigation measures, and regulations applicable to the protection of the drinking water source for Well V201 capture zones (2, 5, and 10-year capture zones).

There are groundwater remediation measures ongoing at the Whittaker Bermite site that would result in downgradient perchlorate concentrations to level off and then decrease. These activities are regulated by the DTSC. Continued pumping of Saugus 1 and 2 wells will provide hydraulic containment and will minimize the perchlorate migration from the Whittaker Bermite site. Land use zoning in the capture zone is referenced as a source protection tool to prevent contamination of the groundwater from surface activities. The various commercial land uses pose the highest risk for accidental releases that could impact the groundwater. Based on the environmental site assessment, 97 percent of the activities of concern are covered under state or local regulations or best management practices. There are source water protection programs in place to prevent contamination of groundwater and SCVWA will be notified of conditions that may impact the quality of source water. One element is the permitting program for any new businesses within the City of Santa Clarita, in particular within the 15-year capture zone of Well V201. The City also has programs designed to prevent pollution from household hazardous wastes.

3.2.4. Effective Treatment and Monitoring

Pursuant to Process Memo 97-005, the project submittal must include a treatability assessment for all contaminants projected to be detectable at the production or extraction wells. The project must address all contaminants of health concern and to treat down to the lowest concentration feasible. The submittal must also include a sampling and analysis plan for the drinking water source(s) and at appropriate locations in the treatment plant. Monitoring associated with a proposal to use an extremely impaired source as a drinking water supply will also require more extensive monitoring,

in terms of frequency of testing as well as numbers of contaminants, than is associated with typical drinking water sources. The water quality surveillance plan should include specifically proposed monitoring wells or monitoring locations and a proposed sampling and analysis plan. The purpose of these requirements is to provide early warning of any unexpected increases in contaminant concentrations or detections of additional contaminants, so that appropriate actions can be taken. SCVWA has addressed these elements in a 97-005 report submittal summarized below (*Appendix B*).

3.2.4.1. Treated Water Goals

SCVWA proposed the treated water goals for Well V201 Treatment Facility are to below the DLR for VOCs and perchlorate.

3.2.4.2. Treatability Assessment

The USEPA recognizes GAC and IX as Best Available Technologies (BATs) for many VOCs, and perchlorate, respectively. Therefore, SCVWA determined that the treatment facility for this project would include a pre-filtration system, a GAC system for VOCs removal, and an IX system for perchlorate removal.

3.2.4.3. Treatment Technologies

SCVWA will utilize bag filters as pre-treatment for protection of downstream treatment systems, followed by GAC treatment system for the removal of VOCs, IX treatment system for the removal of perchlorate, and sodium hypochlorite and liquid ammonium sulfate injection to form chloramines as precautionary disinfection.

3.2.4.4. Maximum Contaminant Level (MCL) Equivalents

Pursuant to Process Memo 97-005, MCL-equivalent assessment is used to judge the appropriateness of treatment for an extremely impaired source with multiple contaminants. If known contaminants can be reduced to an MCL-equivalent of 1 or lower or even to 0 for the mixture of contaminants, it is DDW's belief that a prudent and practical approach has been implemented in providing extra caution for the protection of public health. MCL-equivalent for each group of contaminants (acute vs chronic endpoint) is calculated separately, with a goal for each group to be below an MCL-equivalent of 1. The procedure used for calculating the MCL-equivalents for the Project are discussed in Section 7 of the 97-005 report (*Appendix B*).

The initial MCL-equivalent for the acute risk contaminants is 0.4. For the chronic risk contaminants, the MCL-equivalents for non-cancer health risk and cancer health risk are 1.3 and 0.9, respectively. Taking into consideration the maximum effluent concentration in Well V201 that is less than half the MCL for naturally occurring constituents, the MCL-equivalent for non-cancer health risk is 0.6.

As water quality can change over time, this can affect the MCL-equivalent calculation causing the calculation to be no longer representative of treatment and contaminant exposure. The MCL-equivalent calculation must be reviewed and updated every 5 years with the new calculation submitted to the Division. In the event there is a new contaminant or a change in concentration that causes the MCL-equivalent calculation to be above 1, then operational changes must be made.

3.2.4.5. *Compliance and Process Monitoring*

Sampling locations, constituents, and frequencies for the source and treatment processes are summarized in Section 2.4 of this Report based on information provided in 97-005 Technical Report (*Appendix B*) and the Division's recommendations.

3.2.5. Public Hearing and Comment

Public comment may be part of the permitting process for extremely impaired sources. SCVWA has informed its customers of the proposed treatment facilities, the contaminants of primary concern, and the added wells that are designated as extremely impaired sources.

SCVWA invited public comments and informed its customers of the methods of comment, the duration of the comment period, and the repository locations of the Division's draft permit and engineering report subject to public comment. The public notice instructed that interested parties should submit comments to SCVWA starting [TBD] and that the comments must be received no later than [TBD]. The Division's draft permit and engineering report were available for review at [TBD]. The public comment period was concluded on [TBD] and a public hearing meeting was held on [TBD].

4. CONCLUSIONS AND RECOMMENDATIONS

The Division has evaluated the application and the supporting documents and determined that SCVWA is capable of providing a safe, wholesome, and potable water supply meeting all applicable State Drinking Water Standards. Issuance of an amended domestic water supply permit by the Division to SCVWA for the operation of Well V201 and its treatment facility is recommended subject to the following conditions:

GENERAL

1. This document amends and adds to the domestic water supply permit 05-22-24P-002 SCVWA on December 20, 2024. If any condition of this amendment conflicts with the permit, the conditions of this amendment shall be followed.

2. SCVWA must comply with all the requirements set forth in the California Safe Drinking Water Act, California Health and Safety Code and any regulations, standards, or orders adopted thereunder.

3. The only source approved for domestic water supply are listed in Table 1:

Table 1. Approved Sources

Source	Primary Station (PS) Code	Status	Capacity (gpm)
Well Saugus 160	CA1910240_003_003	Active	2,000
Well N	CA1910240_004_004	Active	1,250
Well W-9	CA1910240_017_017	Active	800
Well U-4	CA1910240_018_018	Active	1,000
Well D	CA1910240_021_021	Active	1,050
Well S-8	CA1910240_025_025	Active	2,000
Well S-7	CA1910240_026_026	Active	2,000
Well N-7	CA1910240_046_046	Active	2,500
Well N-8	CA1910240_047_047	Active	2,500
Well W10	CA1910240_049_049	Active	1,500
Well W11	CA1910240_051_051	Active	1,000
Well Saugus 206	CA1910240_052_052	Active	2,500
Well U-6	CA1910240_058_058	Active	1,250
Well E-15	CA1910240_062_062	Active	1,400
Well E-17	CA1910240_066_066	Active	1,200
Well T7	CA1910240_070_070	Active	1,200
Well Saugus 207	CA1910240_073_073	Active	2,500
Well Q2	CA1910240_005_005	Active	1,320
Clark Well	CA1910240_088_088	Active	600
Guida Well	CA1910240_089_089	Active	950
Honby Well	CA1910240_090_090	Active	900
Lost Canyon Well 2	CA1910240_091_091	Active	700
Lost Canyon Well 2A	CA1910240_092_092	Active	950
North Oaks - Central Well	CA1910240_093_093	Active	1,100
North Oaks – East Well	CA1910240_094_094	Active	900
Sand Canyon Well	CA1910240_096_096	Active	1,000
Sierra Well	CA1910240_099_099	Active	950
Mitchell Well 5B	CA1910240_100_100	Active	1,000
Santa Clara Well	CA1910240_102_102	Active	1,500
Valley Center Well	CA1910240_101_101	Active	1,200
Castaic Lake (State Water Project) (Owned by Department of Water Resources)	CA1910240_087_087	Active	N/A
Saugus Well No. 1	CA1910240_097_097	Active	1,200
Saugus Well No. 2	CA1910240_098_098	Active	1,200
Saugus Well N12	CA1910240_106_106	Active	2,500
Saugus Well N13 (formerly Well 13 – Newhall Division)	CA1910240_105_105	Active	2,500
Well C1	CA1910240_107_107	Active	640
Well C2	CA1910240_108_108	Active	500
Well C7	CA1910240_111_111	Active	2,000
Well P1	CA1910240_112_112	Active	300
Well P3	CA1910240_113_113	Active	550
Well P5	CA1910240_115_115	Active	500
Well V201	CA1910240_020_020	Active	2,000

4. The only approved treatment facilities for SCVWA are those listed in Table 2.

Table 2: Treatment Facilities

Treatment Plant	Treatment Processes	PS Code	Treatment Plant Classification[1]
Well 160 Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_028_028	T1/D1
Well W-9 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_038_038	T1/D1
Well U-4 Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_039_039	T1/D1
Well D Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_041_041	T1/D1
Well S-8 Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_044_044	T1/D1
Well S-7 Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_045_045	T1/D1
Well W10 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_053_053	T1/D1
Well W11 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_057_057	T1/D1
Well 206 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_056_056	T1/D1
Well U-6 Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_059_059	T1/D1
Well E-15 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_063_063	T1/D1
Well E-17 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_067_067	T1/D1
Well T7 Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_072_072	T1/D1
Well 207 Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_074_074	T1/D1
Wells N, N-7, N-8 IX[2] Treatment Facility (PFAS[3] & Perchlorate Removal)	IX[2] and chloramination with the onsite sodium hypochlorite generation and addition, and ammonia addition	Lead Vessel A (CA1910240_075_075) Lead Vessel B (CA1910240_076_076) Lead Vessel C (CA1910240_077_077) Lag Vessel A (CA1910240_078_078) Lag Vessel B (CA1910240_079_079) Lag Vessel C (CA1910240_080_080) Combined IX[2] effluent, before chloramination (CA1910240_081_081) Chloraminated Finished Water (Entry Point to Distribution System) (CA1910240_082_082)	T2[4]

Treatment Plant	Treatment Processes	PS Code	Treatment Plant Classification[1]
Well Q2 IX[2] Treatment Facility	IX[2] and chloramination with the onsite sodium hypochlorite and ammonia hydroxide addition	Lead Vessel (CA1910240_068_068) Lag Vessel (CA1910240_069_069) Chloraminated Finished Water (Entry Point to Distribution System) (CA1910240_086_086)	T1[4]
Clark Well Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_116_116	T1/D1
Guida Well Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_117_117	T1/D1
Sierra Well Chlorination Facility	Tri-Chlor[1] tablet chlorination	CA1910240_122_122	T1/D1
Mitchell 5B Well Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_123_123	T1/D1
Lost Canyon 2 Well Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_118_118	T1/D1
Lost Canyon 2A Well Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_119_119	T1/D1
Sand Canyon Well Chlorination Facility	Calcium hypochlorite tablet chlorination	CA1910240_121_121	T1/D1
North Oaks Wells	Nitrate blending for North Oaks – Central and East Wells, with the SC-9 Connection with calcium hypochlorite tablet chlorination	CA1910240_124_124	T2
Valley Center Well IX[2] Treatment Facility	IX[2] and chloramination with sodium hypochlorite and ammonia sulfate addition	Lead IX[2] Vessel (CA1910240_125_125) Lag IX[2] Vessel (CA1910240_126_126) Finished Water After Chloramination (CA1910240_127_127)	T1[4]
Honby and Santa Clara Treatment Facility	IX[2]/Perchlorate and chloramination with onsite sodium hypochlorite generation and LAS[5] addition	Honby/Santa Clara Lead (CA1910240_146_146) Honby/Santa Clara Lag (CA1910240_147_147) Honby/Santa Clara Finished (CA1910240_148_148)	T1[4]
Castaic Disinfection Facility (Wells C1, C2, and C7)	On-site sodium hypochlorite generation and LAS[5] injection	CA1910240_140_140	T1/D1

Treatment Plant	Treatment Processes	PS Code	Treatment Plant Classification[1]
Manganese Blending (Well C2)	Manganese Blending Treatment	CA1910240_141_141	T2
Earl Schmidt Filtration Plant (ESFP)	Ozonation, rapid mix, contact clarifier, filtration, chlorination, and chloramination	Plant effluent (CA1910240_128_128)	T5
E.G. "Jerry" Gladbach Water Treatment Plant (JGWTP)	Ozonation, rapid mix, contact clarifier, filtration, and chloramination	Plant effluent (CA1910240_129_129)	T5
Saugus Perchlorate Treatment Facility (SPTF) (Saugus Wells 1 & 2)	IX[2] and chloramination VOCs[6] blending in the transmission mains	SPTF IX[3] Lead Vessel Effluent (CA1910240_149_149) SPTF IX[3] Lag Vessel Effluent (CA1910240_150_150) SPTF Effluent After Chloramination (CA1910240_130_130) Distribution system sampling/blending locations CA1910240_131_131 (SC-1) CA1910240_135_135 (SC-2) CA1910240_134_134 (V-5) CA1910240_133_133 (V-7) CA1910240_132_132 (F)	T4
Disinfection and Blending at Newhall Disinfection Facility (NDF) (Saugus Wells N12 and N13)	PFAS[3] and Perchlorate blending, & on-site sodium hypochlorite generation and aqueous ammonia injection	Disinfection (CA1910240_138_138) Blending Compliance Point (CA1910240_139_139)	T2[4]
Pinetree Disinfection Facility (Well P1, P3, and P5)	Onsite sodium hypochlorite generation and aqueous ammonia addition	Soledad Canyon Freeway (CA1910240_142_142)	T1/D1
Nahin RMS[7] (Wells P1, P3, and P5)	Onsite sodium hypochlorite generation and LAS[5] addition	Pressure Zone IV (CA1910240_143_143)	T1/D1
Reyes Adobe RMS[7] (formerly Zone III Reservoirs – Cl_2)	Chloramination	CA1910240_144_144	T1/D1
Lower Bellows Tank RMS[7]	Onsite sodium hypochlorite generation and LAS[5] addition	CA1910240_152_152	T1/D1

Treatment Plant	Treatment Processes	PS Code	Treatment Plant Classification[1]
V201 Treatment Facility	GAC[8] and IX[2] and chloramination with sodium hypochlorite and LAS[5] addition	V201 GAC[8] Vessel #1 Effluent (CA1910240_153_153) V201 GAC[8] Vessel #2 Effluent (CA1910240_154_154) V201 IX[3] Lead Vessel Effluent (CA1910240_155_155) V201 IX[3] Lag Vessel Effluent (CA1910240_156_156) V201 Effluent After Chloramination (CA1910240_157_157)	T2

1. Tri-Chlor = Trichloroisocyanuric acid
2. IX = Ion Exchange
3. PFAS = Per- and Polyfluoroalkyl substances.
4. Treatment classification may change when the State of California adopts PFAS MCLs. See conditions 7 and 17.
5. LAS = Liquid Ammonium Sulfate
6. VOCs = Volatile Organic Compounds
7. RMS = Residual Management System
8. GAC = Granular Activated Carbon

5. No additions, changes, or modifications to the sources of water supply or water treatment facilities outlined in Conditions 3 and 4 shall be made without prior receipt of an amended domestic water supply permit from the Division.

6. SCVWA must maintain an up-to-date Water Quality Emergency Notification Plan (WQENP) to identify how customers will be notified in the event of a water quality emergency. SCVWA must refer to the WQENP for phone numbers to contact the Division after normal business hours in the event of a water quality emergency. SCVWA must immediately notify, in accordance with the WQENP on file, the purveyors receiving the treated water and the Division after learning that the SCVWA treated water contains total coliform or fails to meet any MCL, any provision in this permit, or any order issued under applicable laws and regulations.

Water Quality

7. All water supplied by SCVWA for domestic purposes shall meet all Maximum Contaminant levels (MCLs) established by the Division. If the water quality does not comply with the California Drinking Water Standards, additional treatment shall be provided to meet standards. The plans and specifications for the proposed treatment facilities shall be submitted to the Division for review and approval prior to construction.

8. SCVWA shall monitor all groundwater sources listed in Table 1 in accordance with

Title 22, Chapter 15, CCR and the Division's most recent Vulnerability Assessment and Monitoring Frequency Guidelines. All results shall be submitted to the Division electronically using the designated Primary Station (PS) Codes.

9. SCVWA shall collect raw water samples prior to disinfection from each active well monthly for total coliform analysis using Environment Protection Agency (EPA) standard methods unless a higher monitoring frequency is required. If a positive total coliform sample is detected, the sample shall also be analyzed for E. Coli bacteria. Results shall be submitted to the Division in a summary form by the 10th day of the month, following the month in which the samples were collected.

10. Except for bacteriological analyses and constituents without an analyte number, all water quality monitoring results obtained at a certified laboratory must be electronically submitted to the Division via the California Laboratory Intake Portal (CLIP) using designated primary station codes (PS Codes).

11. SCVWA shall notify the governing body of the local agency in which users of the drinking water reside (i.e., city council and county board of supervisors) when a notification level (NL) is exceeded in drinking water that is provided to consumers.

Operator Certifications

12. The distribution system and treatment facilities shall be operated by personnel who have been certified in accordance with Chapter 13 and Section 64413.7 of Title 22, CCR, Operator Certification Regulations.

    - SCVWA's distribution system has been classified as a D5 distribution system. At a minimum, the designated chief and shift distribution operators shall have D5 and D3 certifications, respectively.
    - Table 3 below summarizes the classification of each treatment facilities, and the minimum grade level for chief and shift operator.

Table 3: Minimum Certification Requirements at Each Treatment Facility

Treatment Facility	Treatment Plant Classification[1]	Minimum Chief Operator Certification	Minimum Shift Operator Certification
Well Q2 PFAS IX	T1	T1	T1
Valley Center Well PFAS IX	T1	T1	T1
Honby and Santa Clara PFAS IX	T1	T1	T1
N-Wellfield PFAS and perchlorate IX	T2	T2	T1
North Oaks Wells nitrate blending	T2	T2	T1
Saugus Well N13 perchlorate and PFAS blending (NDF)	T2	T2	T1
Wells C2 and C6 manganese blending	T2	T2	T1
SPTF	T4	T4	T3
ESFP	T5	T5	T3
JGWTP	T5	T5	T3
V201 Treatment Facility	T2	T2	T1

[1.] Treatment classification may change when the State of California adopts PFAS MCLs. See conditions 7 and 17.

- For treatment facilities consisting of only disinfection for which no Giardia or virus inactivation is required, SCVWA shall utilize either certified distribution operators or certified treatment operators that have been trained to operate the facilities.
- When MCLs are adopted by the State of California for Per- and Polyfluoroalkyl Substances (PFAS), the classification for any PFAS treatment facilities will need to be re-evaluated and operators will need to hold certifications in accordance with the determination.

Cross-Connection Control Program

13. SCVWA shall comply with the Cross-Connection Policy Handbook (Handbook), to prevent SCVWA and its facilities from being contaminated by possible cross-connections. SCVWA shall maintain a program for the protection of the domestic water system against backflow from premises having dual or unsafe water systems in accordance with the Handbook. All backflow prevention assemblies shall be tested annually.

Direct Additives

14. SCVWA shall only use additives that have been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 60. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Indirect Additives

15. SCVWA shall only use chemicals, materials, lubricants, or products that have been tested and certified as meeting the specifications of NSF/ANSI Standard 61 in the production, treatment or distribution of drinking water that will result in its contact with the drinking water, including process media, protection materials (i.e. coating, linings, liners), joining and sealing materials, pipe and related products, and mechanical devices used in treatment/transmission/distribution system, unless conditions listed in Section 64593, Title 22, CCR are met. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Chloramines

16. The water supplied by SCVWA contains chloramines. The public served by SCVWA including the dialyses centers, shall be periodically notified that chloramines are used to disinfect the water. SCVWA shall answer questions that the general public and dialyses centers may have. The notification shall be repeated yearly in SCVWA water system's Consumer Confidence Report (CCR) to the consumers.

17. SCVWA shall ensure that the water in the storage tanks has adequate turnover so that the storage tanks do not act as dead-end storage points which promote nitrification. The approved Nitrification Control and Monitoring Plan shall be implemented to prevent nitrification and to correct nitrification if needed.

18. SCVWA shall monitor and take corrective actions, when necessary, to prevent and mitigate nitrification in accordance with the Nitrification Control and Monitoring Plan approved by the Division. A monthly nitrification report shall be submitted to the Division by the 10th of the following month.

Well V201 Treatment Facility

19. Well V201 Treatment Facility is approved for a maximum flow capacity of 2,000 gpm of treated water. It must not be operated at a daily flow in excess of this capacity without first applying for and obtaining an amended permit from the Division.

20. Except as specified in this permit, the SCVWA shall operate the Well V201 Treatment and Disinfection Facilities in accordance with an Operations, Maintenance and Monitoring Plan (OMMP) approved by the Division. All additions, deletions, or amendments to the plan shall be approved by the Division prior to implementation. SCVWA is responsible for ensuring that the plan is, at all times, representative of the operations, maintenance, and monitoring of the facilities and appropriate changes to the plan are submitted to the Division for approval in a timely manner.

21. The SCVWA shall submit an updated Operations, Maintenance, and Monitoring Manual for the Well V201 Treatment Facility within 120 days after the issuance of this permit amendment, to incorporate the conditions specified in this permit amendment and the necessary operational changes based on the lessons learned during the initial start-up and routine operation of the treatment facility.

22. The bag filters shall be changed when a set pressure differential of 15 psi between the influent and effluent is reached.

23. Each GAC vessel shall not be operated above its maximum design capacity of 1,000 gpm. In addition, SCVWA shall operate the GAC system to meet the minimum and maximum flow through each vessel depending on which GAC media is used, as specified in the permit amendment engineering report and OMMP. The nominal empty bed contact time (EBCT) for each GAC vessel shall be 11.3 minutes at 1,000 gpm flow rate. The vessels shall be operated in a down-flow mode, in parallel configuration.

24. The GAC treatment system objective is to deliver treated water with VOCs concentrations to non-detect. If these levels are exceeded at the GAC effluent, corrective action must be taken immediately.

25. Replacement carbon must be new carbon that complies with ANSI/NSF 61. Replacement carbon must meet the specifications identified in the OMMP. Any change of carbon specifications must be approved in writing by the Division.

26. The carbon media must be changed and replaced according to the criteria specified in the OMMP reviewed and approved by the Division.

27. SCVWA shall ensure that nitrate sloughing during each start-up, including the initial start-up and restart-up after each time the GAC treatment system is removed from service, will not cause the nitrate MCL exceedance.

28. When only one GAC vessel is in service during GAC carbon changeout, SCVWA shall operate the remaining GAC vessel and IX vessels at a minimum and maximum flow rate of 250 gpm and 1,000 gpm, respectively.

29. SCVWA must implement a Division approved metals leach test protocol for all new GAC media installations and obtain written approval prior to placing vessels with new media specification or replacement media from a new supplier or source into service.

30. The specifications for the IX resin is identified in the engineering report and OMMP. Any change in IX resin employed shall be updated in the OMMP and approved in writing by the Division. The targeted treatment goals for the water entering the distribution system are to stay below the DLR for perchlorate and any detection of VOCs.

31. The IX vessels shall be operated in down-flow mode and in lead-lag configuration. The nominal empty bed contact time (EBCT) for each IX vessel shall be 2.11 minutes. Although the maximum design capacity of the IX vessel is 2,400 gpm, the maximum flow entering each vessel shall be limited to 2,036 gpm. The vessels loaded with Evoqua PSR2 Plus™ resin shall not be operated at the flowrate below 500 gpm and 2,036 gpm, respectively, to minimize the potential of channeling effect caused by insufficient pressure across the vessel.

32. The IX treatment system objective is to deliver treated water with perchlorate concentrations to non-detect. If these levels are exceeded at the IX lag vessel effluent, corrective action must be taken immediately.

33. If the system must be shut down and the shutdown lasts over one week, the vessels shall be drained and filled with potable water. The procedures recommended by the manufacturer shall be followed. When the vessels are started up again, bacteriological samples shall be collected from the resin beds to

ensure no excessive bacteria growth in the beds. Proper remedial action shall be taken if excessive growth of bacteria is observed before bringing the vessels back into operation.

34. SCVWA shall monitor the Well V201 Treatment Facility for the constituents for routine monitoring at frequencies no less than those specified in Table 4.

Table 4: Routine Monitoring Schedule

Type	Constituents	Frequency
Raw (Well V201, CA1910240_020_020)	Pressure and Flow Rate	Weekly
	Perchlorate, VOCs, Total Coliform (TC) & HPC, Nitrate, Chloride, Sulfate, TOC, TDS, EC[1], and Alkalinity[2],	Monthly
	PFAS[3]	Quarterly
	SOCs, NLs[4], inorganics (except perchlorate), TICs, Hydrocarbons[5], Explosives[6], and, Radiological	Annually[7]
GAC Vessel #1 – 50% Port Effluent (CA1910240_154_153) GAC Vessel #2 – 50% Port Effluent (CA1910240_156_155)	VOCs	• **Monthly:** if the concentration of any VOCs is below the DLR[8] at the 50% sampling port. • **Weekly:** if the concentration of any VOCs exceeds the DLR[8] at the 50% sampling port.
GAC Vessel #1 Effluent (CA1910240_154_154) GAC Vessel #2 Effluent (CA1910240_156_156)	TC & HPC	Monthly
IX Lead Vessel Effluent (CA1910240_157_157)	Perchlorate and VOCs	Weekly
IX Lag Vessel Effluent (CA1910240_158_158)	Perchlorate and VOCs	Weekly
	TC & HPC, Nitrate, Chloride, Sulfate, TOC, TDS, EC[1] and Alkalinity[2]	Monthly
	PFAS[3]	Quarterly
Finished Water After Chloramination (CA1910240_159_159)	TC & HPC	Monthly

1. Specific Conductance.
2. Alkalinity = Bicarbonate, carbonate, hydroxide alkalinity.
3. Analyzed according to the analytes list, Storet codes, and method specified by the Division.
4. NLs = chemicals that currently have notification levels established. See Appendix Z for the list of chemicals.
5. Includes Total Petroleum Hydrocarbons (TPH), TPH (gasoline fraction), and TPH (diesel fraction).
6. Includes HMX, RDX, and 2,4,6-TNT.

7. Eligible for reduced monitoring upon request from SCVWA and review by the Division after SCVWA submitting substantiating data from long-term operation of Well V201 treatment facilities and all surveillance wells.
8. DLR = Detection Limit for Purposes of Reporting.

35. After GAC and/or resin change-out for any vessel, SCVWA shall monitor the constituents at frequencies no less than those specified in Table 5 at the raw water, the lead and lag vessels that GAC and/or resin change-out has occurred and finished water (after chloramination).

Table 5: Monitoring Plan for Well V201 Treatment Facility Start-Up

Type, Sample Location, & PS-Code	Constituents	Frequency
Raw (Well V201, CA1910240_020_020)	Perchlorate, VOC, Pressure, Flow Rate, Total Coliform (TC) & HPC, Nitrate, Chloride, Sulfate, TOC, EC[1], TDS, Alkalinity[2], Arsenic, pH[3], and Nitrosamines	30 Minutes After Start-Up
GAC Vessel #1 Effluent (CA1910240_154_154) GAC Vessel #2 Effluent (CA1910240_156_156)	VOCs, Nitrate, Arsenic, Antimony, Iron, Manganese, Aluminum, Nickel, Uranium, pH[3], and TC & HPC	After 40 BV[4] Flushing
IX Lead Vessel Effluent (CA1910240_157_157)	Perchlorate, VOCs, Nitrosamines, and Toluene	30 Minutes After Start-Up
IX Lag Vessel Effluent (CA1910240_158_158)	Perchlorate, Pressure, Flow Rate, TC & HPC, Nitrate, Chloride, Sulfate, TOC, EC[1], TDS, Alkalinity[2], Toluene, and Nitrosamines	
Finished Water After Chloramination (CA1910240_159_159)	TC & HPC, and Nitrosamines	

1. Specific Conductance.
2. Alkalinity = Bicarbonate, carbonate, hydroxide alkalinity.
3. Monitor for pH when the GAC media is not an acid-washed type.
4. Bed Volume

36. If necessary, the Division may modify the monitoring requirements specified in Table 4 based on the review of the operation and monitoring records. The SCVWA may request for modification of any monitoring requirements based upon substantiating operation and monitoring data at any time. SCVWA must monitor the Well V201 Treatment Facility, including raw water and treated water, in accordance with the approved OMMP. Any change in the monitoring frequency of the raw water and treated water is subject to review and approval from the Division.

37. The target disinfectant residual for the finished water is 3.0 to 3.5 mg/L as total chlorine. A minimum disinfectant residual of 1.0 mg/L as total chlorine shall be maintained at the entry point to the distribution system for the Well V201 Treatment Facility.

38. The alarm set points as presented in the OMMP must not be changed without prior approval from the Division. In the event of an emergency, where changes to the

alarm set points must be made immediately, the Division must be notified by the end of the next business day following an emergency change in the alarm set points.

39. The alarms and automatic shutdowns of the plant must be tested through a simulation at least quarterly. Records of the quarterly testing must be maintained by SCVWA and made available to the Division when requested.

40. Sampling ports, including for the production wells, the GAC vessels, and IX vessels, must be maintained in good operating condition.

Well V201 Surveillance Wells Monitoring

41. The designated monitoring wells must be sampled and monitored in accordance with the OMMP reviewed and approved by the Division which will include the constituents, frequency, and analytical methods in order to provide early detection of any new constituents or significant changes to concentrations of previously identified constituents that may impact the production wells. If any of these monitoring wells become unavailable, then SVWA must propose and drill replacement monitoring wells and continue the same monitoring program.
42.

Table 6: Routine Monitoring Schedule for Monitoring Wells

Constituents	Frequency	
	Wells DW-1A, B, and C	Wells Library A, B, and C, and Mall A, B, and C
Perchlorate	Quarterly	Quarterly
VOCs	Quarterly	Quarterly
SOCs	Annual	Annual
General Mineral/General Physical	Annual	Annual
Inorganics (excludes asbestos)	Annual	Annual
Radiological	Annual	Annual
Hydrocarbons[3]	N/S[4]	Annual
Explosives[5]	N/S[4]	Annual

1. Eligible for reduced monitoring upon request from SCVWA and review by the Division after SCVWA submitting substantiating data from long-term operation of Well V201 treatment facilities and all surveillance wells.
2. NLs = chemicals that currently have notification levels established. See Appendix Z for the list of chemicals.
3. Includes Total Petroleum Hydrocarbons (TPH), TPH (gasoline fraction), and TPH (diesel fraction).
4. N/S = not sampled
5. Includes HMX, RDX, and 2,4,6-TNT

43. In addition to the monitoring listed in Tables 4, 5 and 6, SCVWA shall monitor Well V201 and all the surveillance wells for the constituents for routine monitoring at frequencies no less than those specified in Table 6.

Table 6: Additional Monitoring Associated with Potential Contaminating Activities Within the 15-year Capture Zone

Constituents	Frequency[1]	
	Well V201	All Surveillance Wells[2]
Acetone	Annual	Annual
Carbon Disulfide	Annual	Annual
Chlorate	Annual	Annual
Chloroethane	Annual	Annual
Chloromethane	Annual	Annual
Chloroform	Annual	Annual
Ethanol	Annual	Annual
Ethyl tert-butyl ether (ETBE)	Annual	Annual
Methyl n-Butyl Ketone (MBK)	Annual	Annual
Methyl ethyl ketone (MEK)	Annual	Annual
Methyl isobutyl ketone (MIBK)	Annual	Annual
Tert-amyl methyl ether (TAME)	Annual	Annual
Tert-butyl alcohol (TBA)	Annual	Annual

1. Eligible for reduced monitoring upon request from SCVWA and review by the Division after SCVWA submitting substantiating data from long-term operation of Well V201 treatment facilities and all surveillance wells.
2. Wells DW1A, B, and C, Library Wells A, B, and C, and Mall Wells A, B, and C.

Records and Reporting

44. A monthly performance report of the Well V201 Treatment Facility shall be submitted to the Division by the 25th day of the following month. As a minimum, the report shall include:
    - A summary of analytical results, including VOCs, perchlorate, competing anions, and nitrosamines, received by the water system in the reporting calendar month.
    - A summary of the bacteriological quality of water.
    - A summary of the Treatment Facility Operational Records which includes:
        - The daily operation, time of use and production of the well,
        - Volume treated prior to replacement of media for each vessel.
        - Daily minimum chloramine residual of the effluent of the Treatment Facility,
        - A summary of both scheduled and unscheduled interruption events.

45. Copies of reports, inspections, and all treatment plant records must be kept for at least five years. Water quality records must be kept for at least ten years.

46. Within 24 hours of receiving notification from the laboratory, SCVWA must notify the Division of any exceedance of an MCL or NL in the finished water leaving the Well V201 Treatment Facility.

Annual Reports

47. SCVWA must prepare and submit an annual report to the Division, which must include the status and condition of the Treatment Facility, technical review and summary of performance and compliance with the permit, any treatment failures, upsets, or difficulties encountered by SCVWA in the year prior. The report must also note if there is an increase in concentration for contaminants not reliably removed by existing treatment system, if there are changes to MCLs, NLs, RLs, PHGs, or USEPA Health Advisories.

48. SCVWA must prepare and submit annually to the Division a report, which must provide an evaluation and technical review of the water quality data gathered from the upgradient surveillance wells and other upgradient production wells and discuss any changes in the characteristics of the plume and the possible impact on the Remediation Wells feeding the Treatment Facility.