FOURTH FIVE-YEAR REVIEW REPORT FOR SAN GABRIEL VALLEY AREA 2 SUPERFUND SITE LOS ANGELES COUNTY, CALIFORNIA

PREPARED BY

U.S. Army Corps of Engineers

Seattle District

FOR

U.S. Environmental Protection Agency

Region 9

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Executive Summary

This is the fourth Five-Year Review of the San Gabriel Valley Area 2 (Site) located in the San Gabriel Valley in Los Angeles County, California. The purpose of this Five-Year Review is to review information to determine if the remedy is and will continue to be protective of human health and the environment.

The Site addresses approximately 10 square miles of groundwater contamination in eastern Los Angeles County within the San Gabriel Valley. Groundwater contamination is believed to result from the cumulative impact of decades of improper chemical handling and disposal practices at numerous industrial operations in the Valley. The Site contamination originates at current and former industrial facilities in and near Azusa, California and extends to the southwest through portions of the cities of Irwindale, Baldwin Park, West Covina, and Industry. The most prevalent contaminants in groundwater are trichloroethylene, tetrachloroethylene, carbon tetrachloride, perchlorate, n-nitrosodimethylamine (NDMA), and 1,4-dioxane.

In March 1994, EPA selected the following remedy for the Site to protect long-term human health and the environment:

- Extraction of contaminated groundwater from the aquifer to limit further lateral and vertical migration.
- Treatment of contaminated groundwater using liquid phase granular activated carbon and/or air stripping with off-gas treatment.
- Delivery of treated groundwater to water purveyors for distribution to their residential and business customers.
- Monitoring of groundwater wells for contaminant concentrations, groundwater levels, and influent and effluent quality from the treatment plants. The intent was to use monitoring data in the operation of the treatment plants and to evaluate the effectiveness of the remedy.

In 1999, EPA updated its 1994 remedy in an Explanation of Significant Differences to address three new contaminants in the groundwater: perchlorate, 1,4-dioxane, and NDMA. Additional treatment processes were required to treat these new contaminants.

The remedy was initially implemented through the installation of four extraction and treatment systems. These systems, constructed between 2000 and 2006, use either liquid-phase granular activated carbon or air stripping to remove volatile organic compounds, ion exchange to remove perchlorate, and ultraviolet oxidation to remove 1,4-dioxane and NDMA. In 2014, an additional extraction and treatment system was incorporated into the remedy. All five extraction and treatment systems are operated by water purveyors.

The remedy is functioning as intended by the decision documents by limiting contaminant migration and reducing contaminant concentrations in groundwater. The groundwater model and other lines of evidence show that the remedy is limiting contaminant migration while the post-treatment monitoring results and mass removal calculations demonstrate a reduction in groundwater contaminant mass.

The operation and maintenance of the extraction and treatment systems has been effective. Several treatment systems have undergone maintenance and/or system upgrades that have temporarily reduced production rates. Some of these upgrades and/or maintenance activities have been undertaken to optimize plant operations to reach EPA's target extraction rates.

The exposure assumptions, toxicity data, and remedial action objectives used at the time of remedy selection are still valid. Chloroform,1,4-dioxane, ethylbenzene, and toluene have Record of Decision standards that are above their respective drinking water standards or Notification Levels. California has also issued drinking water standards for perchlorate, carbon disulfide and 1,2,3-trichloropropane since the Record of Decision and Explanation of Significant Differences were issued. However, the water purveyors are required to meet California drinking water standards as part of their potable water permits, thus there is no impact on protectiveness.

The remedy at the San Gabriel Valley Area 2 Superfund Site is protective of human health and the environment. The extraction and treatment systems in place remove groundwater contaminants and limit further contaminant migration.

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List of Acronyms and Abbreviations

EPA	United States Environmental Protection Agency
gpm	gallons per minute
NDMA	n-nitrosodimethylamine
PCE	tetrachloroethylene
ROD	Record of Decision
Site	San Gabriel Valley Area 2 Superfund Site
TCE	trichloroethylene

1. Introduction

The purpose of a Five-Year Review is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act Section 121, 40 Code of Federal Regulation Section 300.430(f)(4)(ii) of the National Contingency Plan and EPA policy.

This is the fourth Five-Year Review for the San Gabriel Valley Area 2 Superfund Site. The triggering action for this statutory review is the completion date of the previous Five-Year Review. The Five-Year Review has been prepared because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

The San Gabriel Valley Area 2 Superfund Site Five-Year Review was led by Wayne Praskins, EPA Region 9 Remedial Project Manager. Participants included Cynthia Wetmore, EPA Region 9 Superfund Five-Year Review Coordinator, Ray Chavira, EPA and from the U.S. Army Corps of Engineers: Jennifer Phillippe, Physical Scientist, Jeffrey A. Luong, Engineer and Jeff Weiss, Geologist. The review began on October 26, 2021.

Table 1. Five-Year Review Summary Form

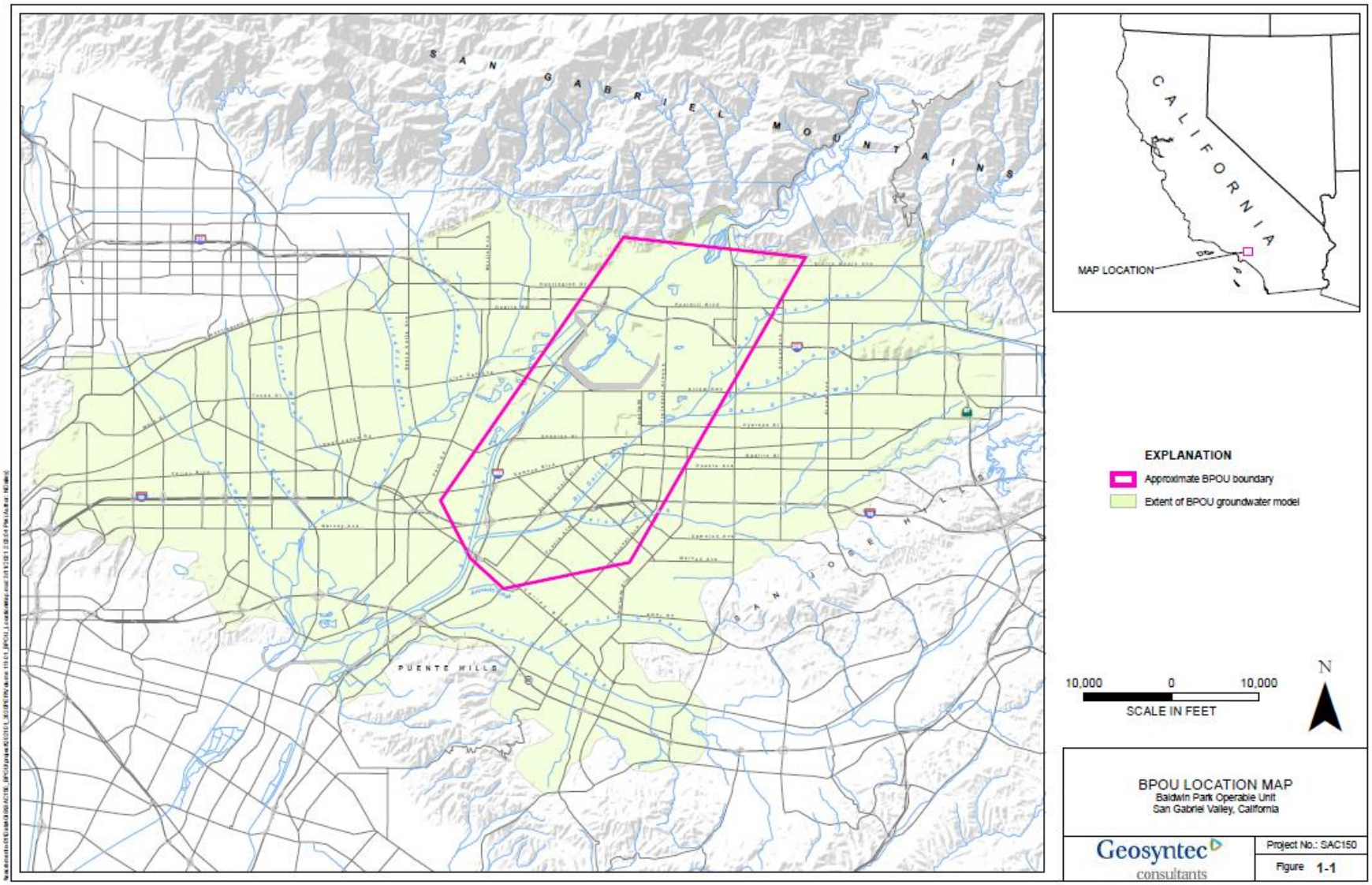
SITE IDENTIFICATION		
Site Name: San Gabriel Valley Area 2		
EPA ID: CAD980818502		
Region: 9	**State:** CA	**City/County:** Cities of Azusa, Irwindale, Baldwin Park, West Covina, and Industry in Los Angeles County
SITE STATUS		
National Priorities List Status: Final		
Multiple Operable Units? Yes	**Has the site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Wayne Praskins		
Author affiliation: EPA Region 9		
Review period: 10/26/2021 - 8/5/2022		
Date of site inspection: 8/3/2022		
Type of review: Statutory		
Review number: 4		
Triggering action date: 8/17/2017		
Due date *(five years after triggering action date)*: 8/17/2022		

1.1. Background

The San Gabriel Valley Area 2 Superfund Site addresses a large area of groundwater contamination in eastern Los Angeles County within the San Gabriel Valley (Figure 1). Groundwater contamination is believed to result from the cumulative impact of decades of improper chemical handling and disposal practices at numerous industrial operations in the Valley. The Site contamination originates at current and former industrial facilities in and near Azusa, California and extends to the southwest through portions of the cities of Irwindale, Baldwin Park, West Covina, and Industry. The most prevalent contaminants in groundwater are trichloroethylene (TCE), tetrachloroethylene (PCE), carbon tetrachloride, perchlorate, n-nitrosodimethylamine (NDMA), and 1,4-dioxane.

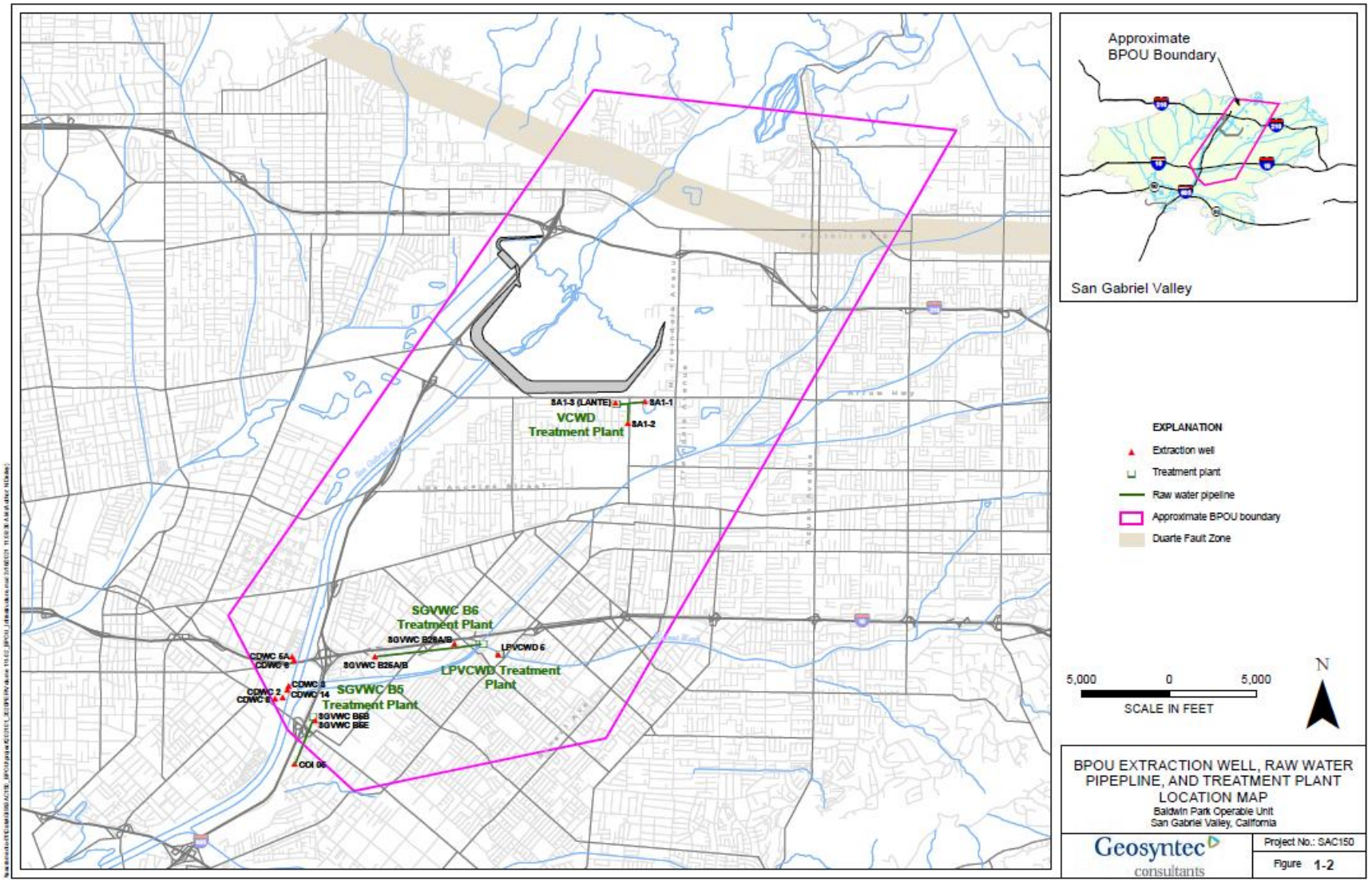
1.2. Physical Characteristics

The Site is defined by the extent of groundwater contamination, which covers approximately 10 square miles (Figure 2). Site land use is largely suburban, with a mix of residential, commercial, and industrial development. Much of the development occurred in the 1950s and 1960s. Groundwater at the Site is the primary source of drinking water for residents and businesses overlying the Site and in adjacent areas. Groundwater pumped from the Site is replenished with precipitation from the Valley, recharge of water flowing from the adjacent San Gabriel Mountains, and recharge of water imported from Northern California.



Source: Geosyntec, 2020. 2020 Annual Performance Evaluation Report, Vol. 1..

Figure 1. Location Map



Geosyntec, 2020. 2020 Annual Performance Evaluation Report, Vol. 1..

Figure 2. Detailed Map

1.3. Hydrology

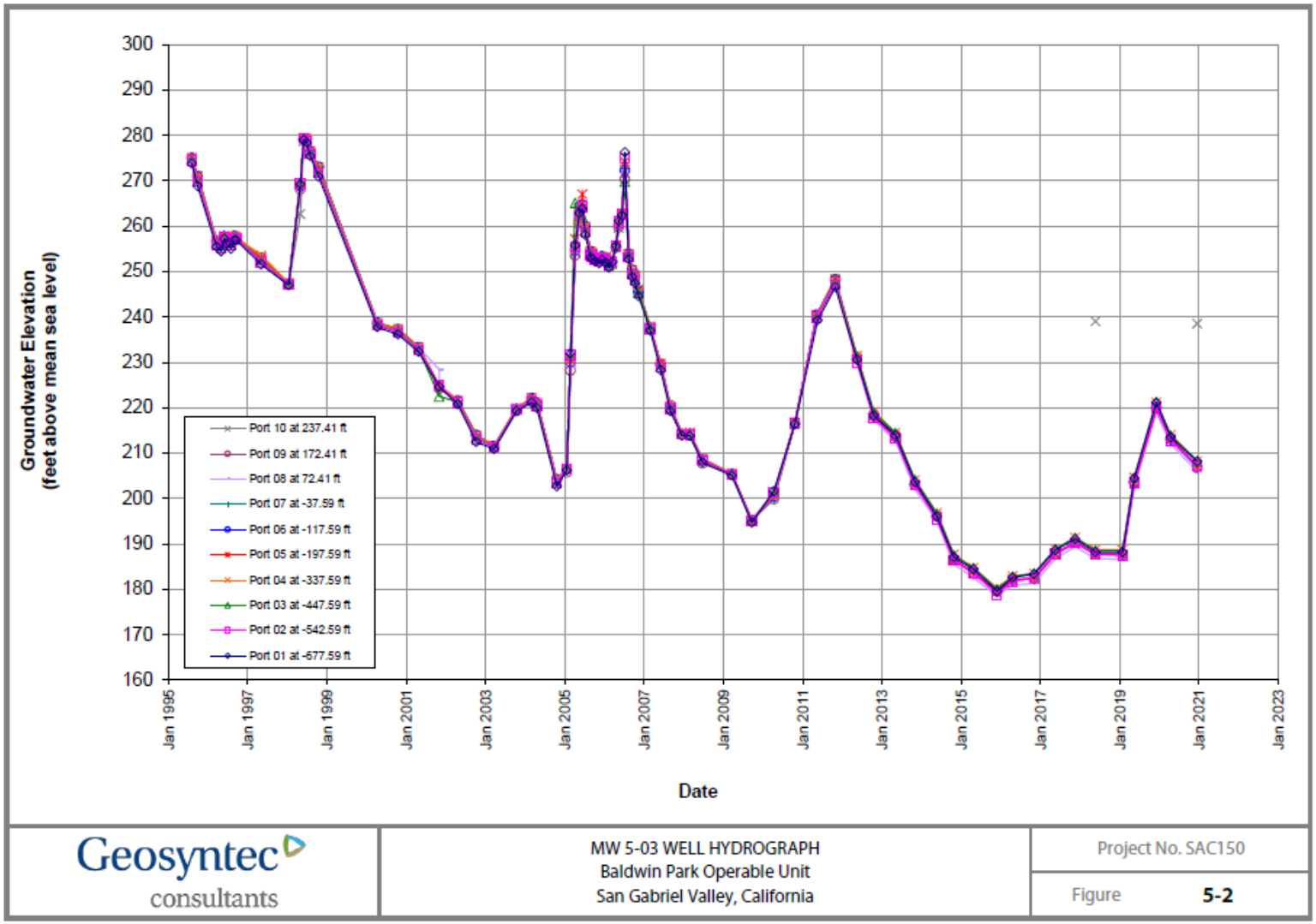
The San Gabriel Basin aquifer underlies most of the San Gabriel Valley. It stores an estimated 3 trillion gallons of water and is the primary source of water for most of the Basin's one million residents. The surficial geology of the Baldwin Park area is composed of alluvial materials deposited by the San Gabriel River and its tributaries. Braided stream deposits occur along the river, stream channels, and major tributaries. Floodplain deposits and undifferentiated alluvium cover the area between the stream channels. The underlying sediments are typically coarse-grained (e.g. sand, gravel, and boulders). Marine sediments underlie some of these non-marine sediments and are included within the groundwater system.

The northern and central portions of the Site consist almost entirely of massive gravel deposits. Lithologic evaluations of well logs indicated gravel deposits greater than 500 feet thick in the northern portions of the Site area, mixed with 10- to 30-foot-thick layers of clay and gravelly clay further south. The thickness of alluvial sediments is believed to range from a few hundred feet in the far north to more than 2,000 feet in the south.

The Duarte Fault passes through the northern portion of the Baldwin Park area, generally east/west, near the base of the San Gabriel Mountains. The Duarte Fault presents a low-permeability barrier that partially limits groundwater movement southward from the San Gabriel Mountains. In the Site area, groundwater levels north of the fault are substantially higher than those to the south.

Hydraulic conductivity estimates in the Baldwin Park area are some of the highest in the basin, indicating that very large extraction volumes are required to create significant changes in the flow of groundwater. Aquifer test results generally yield hydraulic conductivity estimates ranging between several hundred feet per day (ft/day) to over 1,000 ft/day. The highest estimates are for the northern and central portion of the basin; with lower values are observed toward the southwestern and southeastern margins.

Groundwater flows generally to the southwest in the Site area. The elevation of the water table in the Site area varies from year to year, decreasing during dry years and increasing during periods of above-average rainfall and associated groundwater recharge. Based on the hydrograph for MW 5-03, groundwater elevations have generally decreased since 1995. In recent years, groundwater elevations rebounded from a historical low in 2016, prior to beginning to decline again in 2020. (Figure 3). The historical low in 2016 represented an approximately 50 ft decline in water elevation during the 2012-2016 drought (Langridge et al., 2018).



Geosyntec, 2020. 2020 Annual Performance Evaluation Report, Vol. 1..

Figure 3. Hydrograph of MW 5-03

2. Remedial Actions Summary

2.1. Basis for Taking Action

The groundwater within the Baldwin Park area is an existing source of drinking water. Concentrations of several volatile organic compounds and other contaminants of concern, as described in the 1994 Record of Decision (ROD), exceed federal or state drinking water standards. Contaminant concentrations in groundwater above drinking water standards are the primary basis for taking action.

2.2. Remedy Selection

Remedial action objectives for the remedy, selected in the 1994 ROD, are "…to prevent future increases in, and begin to reduce concentrations of all VOCs in groundwater in the Baldwin Park area by limiting further migration of contaminated groundwater into clean and less contaminated areas or depths that would benefit most from additional protection and by removing contamination from the aquifer." (EPA, 1994).

These remedial action objectives remained unchanged in the 1999 Explanation of Significant Differences.

2.2.1. 1994 Record of Decision

The remedy consists of groundwater extraction and treatment, and distribution of treated groundwater from wells located down-gradient of two areas of contamination, Subarea 1 (identified as the Upper Area in ROD) and Subarea 3 (referred to as the Lower Area in the ROD). Subarea 1 includes locations with known and suspected sources of the groundwater contamination and therefore had the highest contaminant concentrations. Subarea 3 includes the most downgradient area of groundwater contamination. The selected remedy consists of the following components:

- Extraction: EPA analysis, at the time the ROD was published, showed groundwater extraction from the upper 400 to 500 feet of the aquifer would prevent further lateral and vertical migration of contaminated groundwater. The estimated groundwater extraction rate for Subarea 1 to prevent migration was 10,500 gallons per minute (gpm) and the estimated groundwater extraction rate for Subarea 3 was 8,500 gpm.
- Treatment: The ROD treatment methods included liquid phase granular activated carbon and/or air stripping with off-gas treatment. The ROD required that the treated groundwater meet federal and state drinking water standards presented below in Table 2, to allow for either domestic water supply or groundwater recharge.
- Distribution: The ROD expressed a preference for delivery of the treated groundwater to one or more water purveyors for distribution to their residential and business customers. If agreements could not be reached for distribution of treated water by water purveyors, or if there was excess water not used by the water purveyors, the treated water would be delivered to spreading basins and flood control channels. The remedy included piping and pumps to transport untreated water to the treatment systems and to deliver the water to the end users.

- Monitoring: The remedy monitoring requirements include sampling existing wells, installation and sampling of new wells, and measuring groundwater levels from new and existing wells. Monitoring also includes sampling influent and effluent water from the treatment systems. The monitoring results are used to evaluate the effectiveness of the remedy.

2.2.2. 1999 Explanation of Significant Differences

The 1999 Explanation of Significant Differences addressed three contaminants not identified as contaminants of concern in the ROD: perchlorate, used in solid rocket fuel; NDMA, an unwanted trace constituent present in liquid rocket fuel; and 1,4-dioxane, used as a stabilizer in chlorinated solvents.

Discovery of the new contaminants required the remediation plan to include:

- Additional treatment processes to remove the newly identified contaminants, which would not be effectively removed using the original treatment processes.
- Additional extraction wells farther south to capture the new contaminants which were detected farther down-gradient than the original contaminants.

Neither EPA nor the State had adopted enforceable drinking water standards for NDMA, perchlorate or 1,4-dioxane at the time the Explanation of Significant Differences was issued, so treatment standards included in the Explanation of Significant Differences were based on the State action levels (now called "Notification Levels") (Table 2).

Table 2. Contaminants of Concern and Their Treatment Standards

Contaminant of Concern	1994 ROD (µg/L)	1999 Explanation of Significant Differences (µg/L)	Basis
Acetone	—	—	—
Benzene	1	—	State Drinking Water Standard
Carbon Disulfide	—	—	
Carbon Tetrachloride	0.5	—	State Drinking Water Standard
Chloroform	100	—	Federal Drinking Water Standard
1,1-Dichloroethane	5	—	State Drinking Water Standard
1,2-Dichloroethane	0.5	—	State Drinking Water Standard
1,1-Dichloroethene	6	—	State Drinking Water Standard
cis-1,2-Dichloroethene	6	—	State Drinking Water Standard
trans-1,2-Dichloroethene	10	—	State Drinking Water Standard
Ethylbenzene	680	—	State Drinking Water Standard
Methylene Chloride	5	—	Federal Drinking Water Standard
Tetrachloroethene	5	—	Federal Drinking Water Standard
Toluene	1000	—	State Drinking Water Standard
1,2,3-Trichloropropane	—	—	
1,1,1-Trichloroethane	200	—	Federal Drinking Water Standard
Trichloroethene	5	—	Federal Drinking Water Standard
Xylene	1,750	—	State Drinking Water Standard
Perchlorate	—	18	State Notification Level
NDMA	—	0.002	State Notification Level
1,4-dioxane	—	3	State Notification Level
µg/L = micrograms per liter			

2.3. Remedy Implementation

Five groundwater treatment and extraction systems are currently in use; however, the selected remedy was initially implemented by installing four systems. The four systems were constructed between 2000 and 2006. One of the systems was installed in Subarea 1 and three of the systems were installed in Subarea 3. An additional treatment system, located in Subarea 3 and operated by the California Domestic Water Company, was incorporated into the remedy in 2014. The California Domestic Water Company system was added after remedy evaluations indicated that the effectiveness of the remedy in Subarea 3 was dependent on California Domestic Water Company's groundwater extraction. All the extraction and treatment systems are operated by water purveyors, which distribute treated water to their residential and commercial customers. Table 3 provides a summary of the extraction and treatment systems, including the target pumping rates established by EPA for each system.

2.3.1. Subarea 1

The Valley County Water District Lante Treatment System is the only treatment system in Subarea 1. To optimize mass removal of contaminants and provide adequate hydraulic containment, the current EPA-targeted pumping rates for Subarea 1 are 5,000 gpm from extraction well SA1-3 and 1,000 gpm from extraction well SA1-1. Monitoring and operational data are provided in monthly reports.

2.3.2. Subarea 3

The four groundwater extraction and treatment systems located in Subarea 3 are the La Puente Valley County Water District, San Gabriel Valley Water Company B6, San Gabriel Valley Water Company B5, and the California Domestic Water Company plants. The current EPA-targeted pumping rates are presented in Tables 3. The treatment systems at La Puente Valley County Water District and San Gabriel Valley Water Company were upgraded in 2010 and 2014 by replacing the regenerable ion exchange systems with single pass ion exchange systems. The systems undergo routine maintenance and monitoring with results provided in monthly reports.

Table 3. Summary of Extraction and Treatment Systems

Extraction and Treatment System		Number of Primary Extraction Wells	Annual Target Extraction Rate (gallons per minute)	Treatment Method for:				
				Volatile organic compounds	1,2,3-Trichloropropane	Perchlorate	Nitrate	1,4-dioxane & NDMA
Subarea 1	Valley County Water District - Lante Treatment Plant	2	6,000	Air strippers with vapor phase granular activated carbon off-gas treatment	Liquid phase granulated activated carbon	Single pass ion exchange	Ion exchange carousel (Calgon ionic separation process)	Ultraviolet oxidation
Subarea 3	La Puente Valley County Water District	1	2,250	Air strippers with vapor phase granular activated carbon off-gas treatment		Single pass ion exchange		Ultraviolet oxidation
	San Gabriel Valley Water Company B5	3	7,000	Liquid phase granular activated carbon		Single pass ion exchange		Ultraviolet oxidation
	San Gabriel Valley Water Company B6	4	6,500	Air strippers with vapor phase granular activated carbon off-gas treatment		Single pass ion exchange		Ultraviolet oxidation
	California Domestic Water Company	3	8,000	Air strippers with vapor phase granular activated carbon off-gas treatment		Single pass ion exchange		Ultraviolet oxidation

2.4. System Operations and Maintenance

Section 11.5 of the 1994 ROD outlines the required monitoring program for the remedy, which includes the following:

- Verify or refine the boundaries of upper and lower areas (now known as Subareas 1 and 3) to help determine final pumping configurations;
- Verify or refine the efficiency of EPA's recommended pumping configurations;
- Verify or revise contaminant influent concentrations that will be used in the design of the treatment facilities;
- Provide an early warning network so changes in the groundwater flow regime or contaminant concentrations are identified in time to institute necessary facility and operational changes;
- Evaluate the presence and approximate location of non-aqueous phase contamination or other subsurface sources of groundwater contamination;
- Evaluate the effectiveness of the remedy in satisfying the remedial objectives of limiting vertical and lateral migration of contaminated groundwater and removing contaminant mass from the groundwater in the upper and lower areas; and
- Help determine the need for additional remedial actions in the Baldwin Park area and the nature of the final remedy.

The approach to performance monitoring and evaluation consists of the following components:

- Potentiometric head measurements used to generate potentiometric surface maps for comparison to model simulation results;
- Integration of groundwater flow modeling and particle tracking with current plume maps and known source locations to evaluate performance of the extraction systems in limiting contaminant migration;
- Water quality sampling to provide information on contaminant distribution and to produce plume maps;
- Water quality sampling and measurement of extraction well pumping rates and production volumes; and,
- Use of pumping rates and water quality data to calculate the mass of contaminants removed from the aquifer by the extraction and treatment systems.

3. Progress Since the Last Five-Year Review

3.1. Previous Five-Year Review Protectiveness Statement and Issues

The protectiveness statement from the 2017 Five-Year Review for the San Gabriel Valley Area 2 Site stated the following:

> *The remedy at the San Gabriel Valley Area 2 Superfund Site is protective of human health and the environment. The extraction and treatment systems in place remove groundwater contaminants and limit further contaminant migration.*

The 2017 Five-Year Review did not include any issues and recommendations.

3.2. Work Completed at the Site During this Five-Year Review Period

The following paragraphs describe operations and maintenance performed in the last five years at each of the treatment systems. The water purveyors are required to meet all drinking water standards including those for nitrate, which is not a Site-related contaminant.

3.2.1. Valley County Water District

Programming and startup testing of the nitrate-specific resin in ion exchange carousel B was conducted throughout 2017 and completed in May 2018 at various flowrates as required by the startup test plan to support California State Water Resources Control Board Division of Drinking Water permitting.

After reviewing data from a test monitoring well installed to evaluate the need for a new extraction well, the Valley County Water Department rehabilitated and redeveloped the casing in the Arrow Well in August – October 2017 using mechanical and chemical treatment methods followed by pumping development. The Valley County Water District rebuilt the Arrow Well building in 2018 and completed pump and motor installation in March 2019. The CA Division of Drinking Water inspected the Arrow Well on March 8, 2019, and in April approved the Valley County Water District startup testing plan. The California Division of Drinking Water gave verbal approval for delivery of treated water from the Arrow Well to customers during startup testing if initial water quality testing showed treated water quality was compliant on August 26. Testing of the Arrow Well was completed in December 2019. The signed permit amendment for operation was submitted on January 12, 2022.

In 2019 and 2020, the Valley County Water District updated the treatment facility hardware and software including upgrades to the user interface controls and programmable logic controller. In 2019 particularly, this, along with the testing at the Arrow Well, led to a significant decrease in pumping rates below target levels.

The treatment plant was out of service between May and July 2021 due to the replacement of resin and other plant improvements; the plant resumed operation on August 24, 2021. Well SA1-1 experienced motor failure in April 2021 and continued to be offline through December 2021, while waiting for arrival

of the replacement components which have been delayed due to supply chain shortages. The Arrow well failed immediately after startup in 2022 and is currently under repair. Well SA1-1 was repaired in early 2022 and has returned to normal operations. Due to all these well problems, the Valley County Water Department only achieved 33% of its approved target extraction flowrate.

Recent developments suggest that the target rates should be reevaluated. Contaminant concentrations in Subarea 1 have decreased significantly and, the Valley County Water District has brought online a second, high-capacity extraction well. A reduction in the targeted SA1-1 extraction rate could have an additional benefit. Well SA1-1 has higher nitrate concentrations than Wells SA1-3 or SA1-4, contributing to the need to operate the nitrate removal system. As reported in Appendix G, the Valley County Water District has been unable to achieve the targeted extraction rate in part due to the high level of maintenance required for the nitrate removal system.

3.2.2. La Puente Valley County Water District

The La Puente Valley County Water District pumping rates have trended upward since increasing the air to water ratio began in 2016. The La Puente Valley County Water District received a temporary approval to operate Air Stripper #2 at an air to water ratio of 45 to 1 in 2018 to allow the system to operate at a higher flowrate. A final permit addendum request for the new air to water ratio at Air Stripper 2 is to be submitted in 2023, along with proposed changes to the nitrate and perchlorate treatment equipment and other updates to the operations and maintenance plan.

3.2.3. San Gabriel Valley Water Company B5

The San Gabriel Valley Water Company completed a pilot study from 2017 to 2018 on the use of reactivated liquid granular activated carbon at Plant B5, which concluded that significant cost-savings could be achieved by using reactivated carbon while still achieving drinking water standards in treated water.

The San Gabriel Valley Water Company rehabilitated Well B5E in April 2018 in an attempt to improve extraction rates. Significant improvements were noted in the production rate of Well B5E when it was returned to service in February 2019.

The 2020 production rate while less than the target rate represented an increase from 2019 and the highest rate achieved since 2014 (prior to the drought). The increased production rate was attributed to the use of standby well B5D. The San Gabriel Valley Water Company continues to evaluate the impact of decreasing water levels on the production rates.

3.2.4. San Gabriel Valley Water Company B6

Design of an additional ion exchange system to treat nitrate began in October 2014. The San Gabriel Valley Water Company completed testing of the system between July and October 2018. The Division of Drinking Water issued a permit in May 2018 for the use of the nitrate ion exchange system and the existing single pass ion exchange system for perchlorate.

In January 2018, the San Gabriel Valley Water Company received conditional funding approval from the State Water Resources Control Board to test new UV technologies at Plant B6. In 2019, the 100 percent design plans for the B6 UV Demonstration Project were completed and sent out for bid. The contract was awarded in 2020 to RC Foster for construction.

B26A and B25A were offline from January to March 2020 for repairs, which reduced the overall production rate for the B6 Plant below the target. No other significant deviations from the target production rate were noted during the review period.

3.2.5. California Domestic Water Company

Construction of an interconnection pipeline between the San Gabriel Valley Water Company and the California Domestic Water Company was completed in 2017. In 2018, the San Gabriel Valley Water Company began delivering water to the California Domestic Water Company. The California Domestic Water Company installed Well 2A as a replacement for Well 2 in 2018 and placed Well 2A into operation in 2020.

4. Five-Year Review Process

4.1. Community Notification and Site Interviews

A public notice was made available by a newspaper posting in the *Highlander* in March 20-26, 2022, stating that there was a Five-Year Review and inviting the public to submit any comments to the EPA. No public comments were received. The results of the review and the report will be made available on EPA's Site webpage (http://www.epa.gov/superfund/sangabrielbaldwinpark) and at the Site information repository located at the following locations:

EPA Superfund Record Center
75 Hawthorne Street
San Francisco, CA 94105

West Covina Public Library
1601 West Covina Parkway
West Covina, CA 91790-2786

Interview questionnaires were sent to the California Department of Toxic Substances Control and San Gabriel Basin Water Quality Authority. Both agencies reported an overall good impression of the project and did not express any major concerns. The San Gabriel Basin Water Quality Authority representatives did note that more frequently issued Facts Sheets from the EPA would be beneficial for communication with the community at large.

4.2. Data Review

The data review focuses on the two parts of the remedial action objective; 1) "limit migration of contaminated groundwater into less contaminated areas" and 2) "reduce concentrations of volatile organic compounds in groundwater." The data used for the review included contaminant concentrations at

monitoring wells and extraction wells, groundwater extraction rates and results of the numeric groundwater flow model updated using annual data.

4.2.1. Contaminant Migration and Groundwater Quality Trends

The data reviewed provide evidence that contaminants are not migrating into clean areas and that hydraulic capture is occurring. Contaminant concentrations at the two downgradient wells MW 5-26 and MW 5-27 were below cleanup levels for the previous five years except for one sample. The PCE concentration at MW 5-26 was 22 ug/L in 2020 (cleanup level of 5 ug/L) and then dropped to 1 ug/L in 2021. A single exceedance does not indicate contaminations is migrating into clean areas. There was no increasing trend of PCE at MW 5-26 or increases of contaminant concentrations in the surrounding wells that indicated contaminants are migrating beyond the Site.

In addition, the calibrated groundwater flow model, used at the Site as the primary tool for selecting the targeted extraction rates and for assessing hydraulic capture, is updated with current pumping rates and groundwater level measurements from monitoring wells on an annual basis. For parts of the past five years, the actual pumping rates at the treatment systems except California Domestic Water Company were less than the target pumping rates (See Table 4). However, even with the reduced pumping rates, hydraulic capture was still achieved based on the results from the 2021 modeling simulations.

Groundwater water quality monitoring is performed at pumping wells and monitoring wells across the site (Figure 4). The monitoring program includes sampling at 29 monitoring wells and 24 production and extraction wells. Nineteen of the monitoring wells are multiport wells with multiple screened intervals that allow collection of samples from various depths. Ten of the monitoring wells and 13 of the extraction and production wells are also sampled as required by water purveyor drinking water permits.

Mann-Kendall trend analysis of contaminants at each of the wells indicates contamination is increasing near the downgradient and deeper portion of the site for TCE concentrations from 2004 to 2020 (Figures 5 through 7). The Mann-Kendall results for other contaminants have a similar distribution as TCE. The shallow upgradient wells have decreasing contamination trends and the deeper downgradient wells have increasing trends. This is likely due to the natural migration of contaminants downgradient and the higher extraction rates downgradient that are pulling contamination downgradient. The remedial action objective of limiting contamination from migrating into uncontaminated areas is still being achieved based on the furthest downgradient wells, MW 5-26 and MW -27, which continue to be mostly non-detect.

Table 4. Actual Production Rate vs Target Rates

	2017		2018		2019		2020		2021	
	Average Annual Production Rate (gpm)	Percent of EPA Approved Target Rate	Average Annual Production Rate (gpm)	Percent of EPA Approved Target Rate	Average Annual Production Rate (gpm)	Percent of EPA Approved Target Rate	Average Annual Production Rate (gpm)	Percent of EPA Approved Target Rate	Average Annual Production Rate (gpm)	Percent of EPA Approved Target Rate
Subarea 1 Valley County Water District SA-1 Subproject	2,898	48.3%	2,395	39.9%	459	7.7%	3,500	58.3%	1,998	33.3%
Subarea 3 La Puente Valley Water Company District Subproject	2,175	96.7%	2,266	100.7%	2,355	104.7%	2,344	104.2%	2,312	102.8%
Subarea 3 San Gabriel Valley Water Company B6	6,496	99.9%	6,541	100.6%	6,543	100.7%	5,018	77.2%	5,259	80.9%
Subarea 3 San Gabriel Valley Water Company B5	5,918	84.5%	5,451	77.9%	6,457	92.2%	6,990	99.9%	5,102	72.9%
California Domestic Water Company	13,145	164.3%	11,709	146.4%	10,426	130.3%	12,470	155.9%	11,850	148.1%

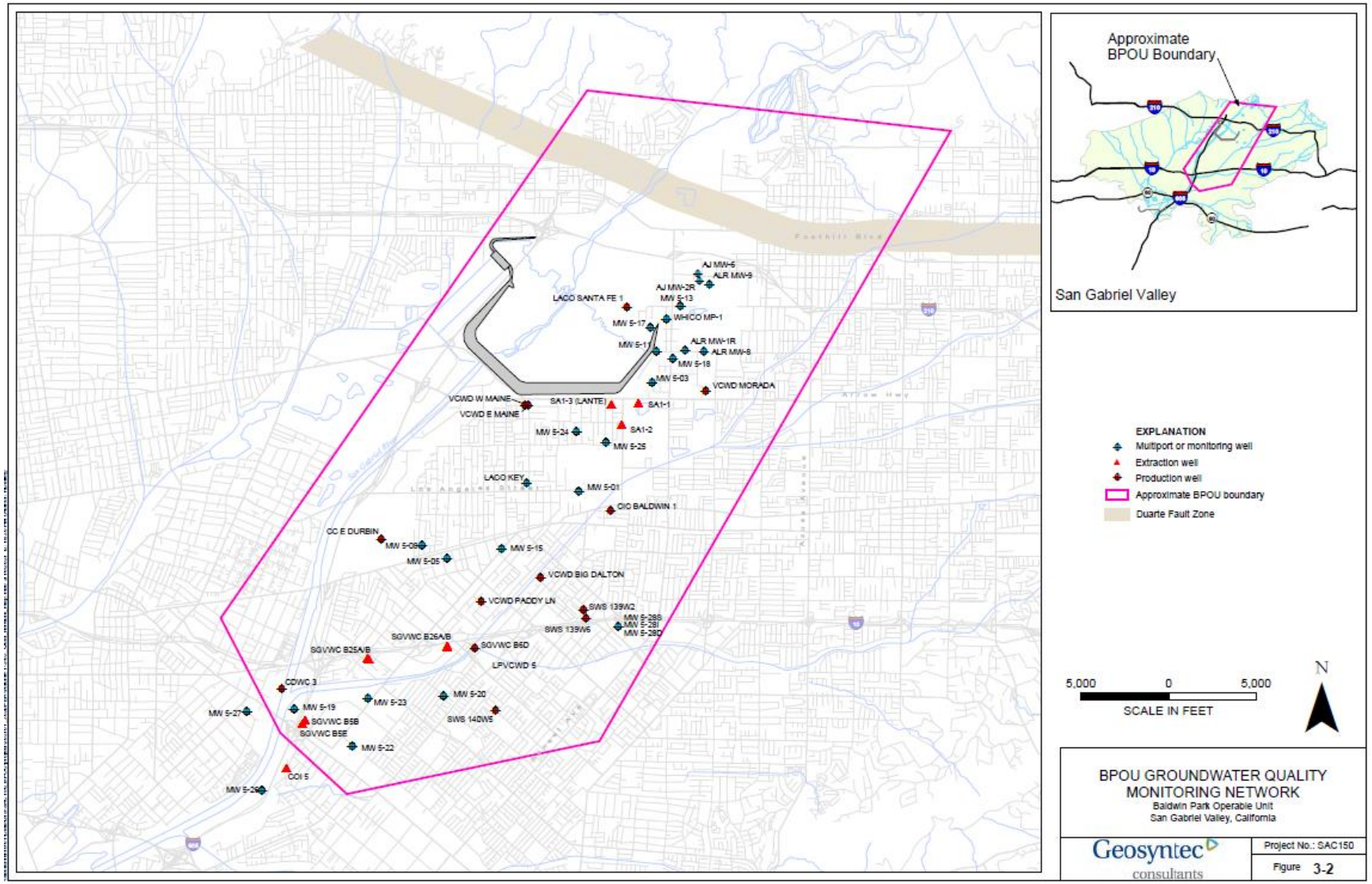


Figure from Geosyntec BPOU 2020 Annual Report

Figure 4. Groundwater Monitoring Wells

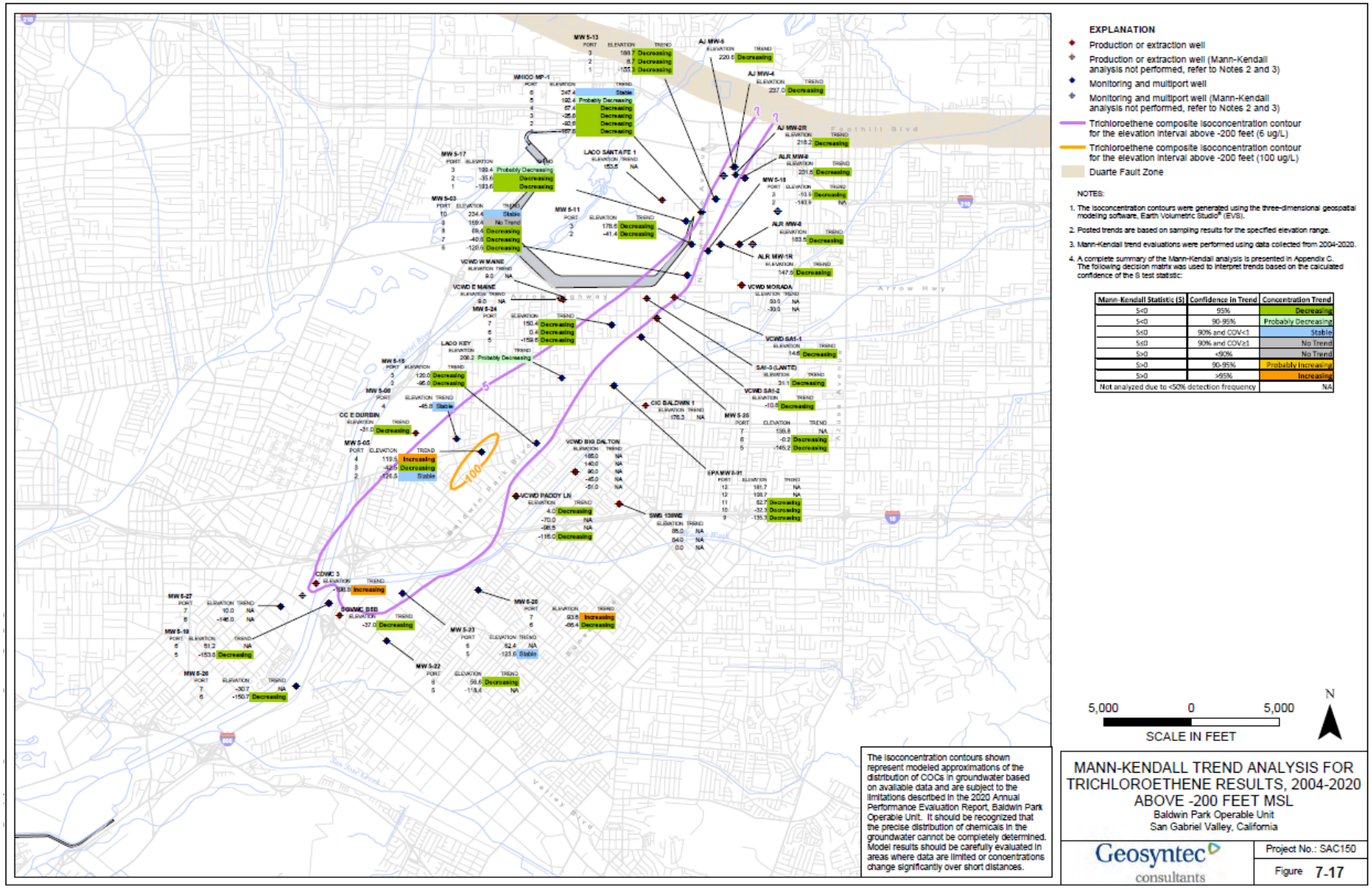


Figure from Geosyntec BPOU 2020 Annual Report

Figure 5. Mann-Kendall Trend Analysis for TCE above -200 feet MSL

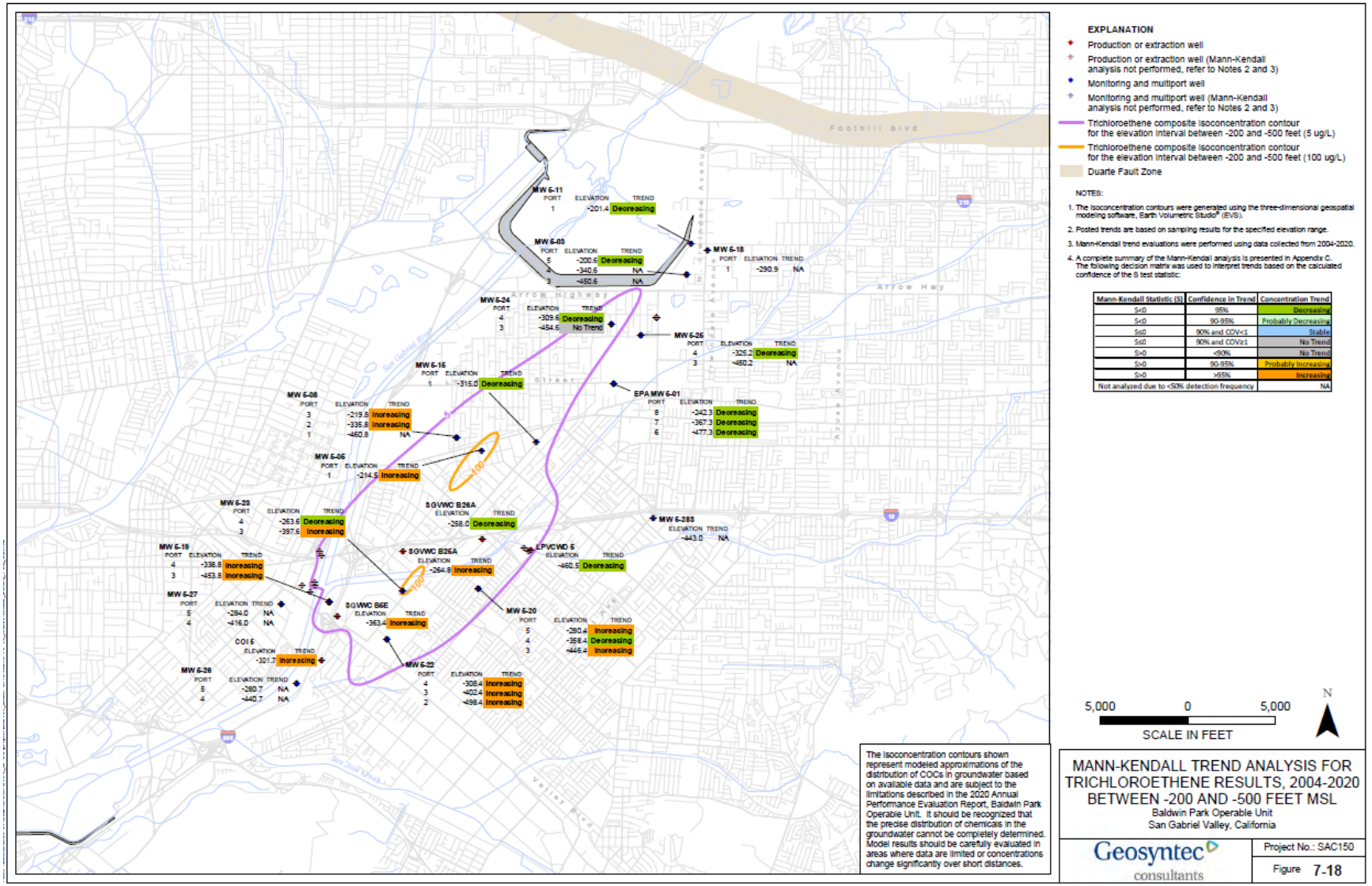


Figure from Geosyntec BPOU 2020 Annual Report

Figure 6. Mann-Kendall Trend Analysis for TCE between -200 and -500 feet MSL

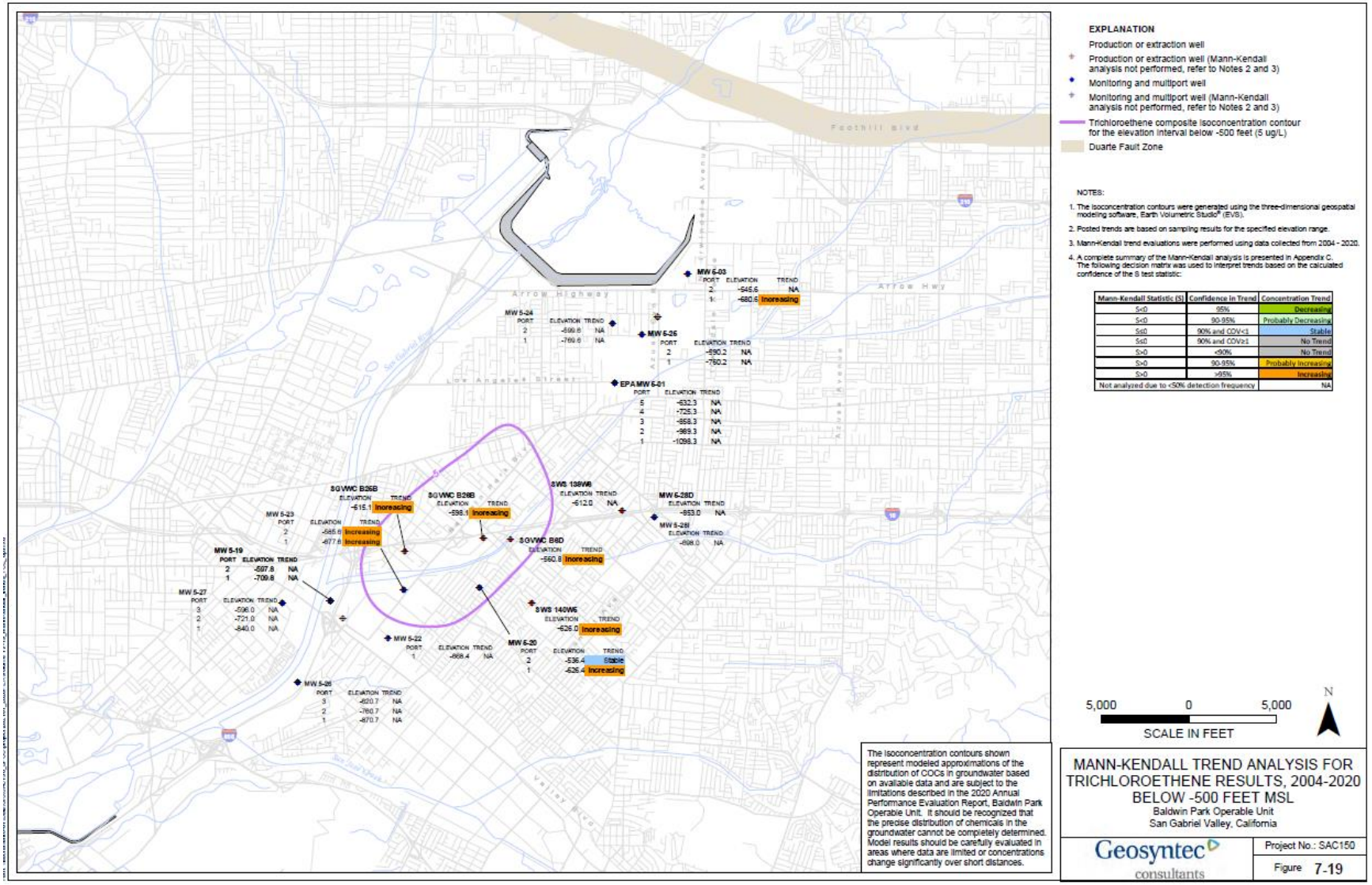


Figure from Geosyntec BPOU 2020 Annual Report

Figure 7. Mann-Kendall Trend Analysis for TCE below -500 feet MSL

4.2.2. Contaminant Mass Removal

The remedy also includes removing contaminant mass using the treatment systems. The estimated combined contaminant mass removal for the five treatment systems between 2017 and 2021 is summarized in Table 5. The contaminant mass is calculated based on the volume and concentration of the groundwater treated.

Table 5. Mobile Dissolved Chemical Mass Removed from Groundwater

Treatment Plant	2017 (pounds)	2018 (pounds)	2019 (pounds)	2020 (pounds)	2021 (pounds)
Valley County Water District	475	381	369	1,443	723
La Puente Valley Water Company District	275	258	482	246	232
San Gabriel Valley Water Company B6	2,970	2,118	3,661	2,883	3,405
San Gabriel Valley Water Company B5	225	345	250	305	435
California Domestic Water Company	1,201	1,612	1,283	2,622	2,607
TOTAL	**5,146**	**4,714**	**6,045**	**7,499**	**7,402**

4.2.3. Sustainability

The 2019 Government Accounting Office Report notes that no additional hazards associated with climate change were identified for the Site. While the report does not evaluate all hazards it does assess vulnerability to flooding, sea level rise, wildfires, and storm surge.

The San Gabriel Valley is likely to experience a greater number of days with extreme heat as the climate changes (U.S. Dept. of Interior et al, 2016). Recent climate modeling conducted as part of California's Fourth Climate Change Assessment universally supports increasing temperatures across the south coast in all scenarios investigated (He et al., 2018). The risk to electrical transmission lines from increasingly large, unpredictable wildfires in Southern California is anticipated to increase, particularly in urban fringe areas (Dale et al., 2018). However, due to the water supply being a key resource for the area, restoration of the power source in the area would be a priority, and therefore, unlikely to affect the long-term operation of the remedy.

As discussed in Section 1.3, groundwater within the basin reached a historical low in 2016 after the 2012-2016 drought (Figure 3). California's Fourth Climate Change Assessment notes that while the overall

average precipitation is not forecast to change dramatically, extreme variations are expected on a yearly basis, which is expected to lead to more extreme droughts in the already drought prone South Coast of California. The potential increase in frequency and intensity of droughts due to climate change will likely lead to increased groundwater usage in the Los Angeles area (He, 2018). As a result of this increased usage, water levels may continue to drop, which would hinder meeting the target pumping rates established in the remedy and possibly require installation of additional, deeper wells.

4.3. Site Inspection

The inspection of the Site was conducted on August 3, 2022. In attendance were Raymond Chavira, EPA, Jeffrey Luong, USACE, Christine Bucklin, DTSC, Sam Lo and Mayra Lopez, Stenson Engineering and representatives from Valley County Water District , La Puente Valley Water Company District, San Gabriel Valley Water Company B6, San Gabriel Valley Water Company B5 and California Domestic Water Company (see Appendix G). The purpose of the inspection was to assess the condition of the remedy and verify that the remedy is operating as intended.

California Domestic Water Company

One driveway entrance from Gilman Rd was observed and a fence along the perimeter secured the treatment plant. Secondary fences were observed within the interior surrounding the three air stripper towers. Mr. Venegas noted that vandalism was a minor issue during the summer months, but no other major security concerns as the control rooms and buildings are securely locked. The participants made their way to the control room where the O&M manuals and dated as-builts/plans were observed.

Mr. Venegas, Director of Water Operations, and Ms. Noriega, President of the water company, noted that the Environmental Response Plan was updated in 2020 per the EPA Risk Resiliency Assessment which addressed floods as the plant was located on a flood plain. The water company representatives noted there were no concerns for a flood, but in the unlikely event one was to occur, the treatment plant would shut down and conditions would be evaluated prior to restarting operations.

Mr. Venegas and Ms. Noriega noted that there were no major changes in components within the past five years and that the plant consistently meets or exceeds its intended flow extraction rate. In the event water levels continue to decline, the water company is already prepared with pumps at about 30 ft below ground surface (bgs).

No concerns were noted during the inspection.

San Gabriel Valley Water Company B5

One driveway entrance was observed from Cloverleaf Dr., and the treatment plant was secured by a fence surrounding the perimeter. Mr. Ramos, Operations Manager, and Mr. Van, Superintendent, mentioned that there have been break-ins by transients who have climbed over the fence to use the eyewash stations and get over to the neighboring property. No other security concerns were mentioned; however, Mr. Ramos noted that the plant had plans to develop a cyber security assessment to protect against cyber

security threats in the future. Mr. Ramos noted that their system does not rely on the internet but utilizes radio communications.

Mr. Ramos and Mr. Van noted that the Environmental Response Plan (ERP), located at their HQ close by, included plans in the event of a natural disaster emergency. Mr. Van led the participants throughout the treatment processes explaining that there are three on-site wells, Wells B5E, B5B (not in operation due to on-going repairs), B5D; and one off-site well, Industry Well No. 5. Mr. Van noted they installed a new pump assembly in 2019 for well B5E. Mr. Van noted that there were no issues with the overall treatment system, the only repair needed was in regard to the extraction wells (B5B). Mr. Van noted that because of the lengthy lead time to procure materials, Well B5B has been down for 1.5 years, and therefore the groundwater treatment plant has not been able to meet their target flow rate of 7,000 gpm. Mr. Van noted that the groundwater treatment plant is already prepared in the event water levels continue to decline as they added 20 feet of piping in anticipation of potential drought levels.

No concerns were noted during the inspection.

San Gabriel Valley Water Company B6

Two driveway entrances were observed on the southern portion of the treatment plant, and two driveway entrances observed on the plant north of Corak St. Approximately 10-12 security cameras were observed around the property. Only one security breach was noted within the past five years, specifically a burglarized intrusion where an individual disguised as a Cal Trans worker punctured the tires of the on-site vehicles.

Mr. Van explained that the treatment plant has a target flowrate of 6,500 gpm but has been achieving a flow rate of 6,000 gpm for the past month or two. Mr. Van stressed that the biggest challenges for this treatment plant were the four air stripping towers and their associated heater components. Air Strippers #3 and #4 have been fully calcified resulting in the restriction of air flow. The packing in the two air strippers would need to be replaced; however, even if the packing were to be replaced, the two towers would still be unable to treat to non-detect themselves. As a result, the water company and stakeholders are looking at alternatives. Mr. Van further explained that the heater components for the air strippers were another large component to the challenges the treatment plant faced, which they are also working to get addressed as part of the alternatives.

No other concerns were noted during the inspection.

La Puente Valley County Water District

One driveway entrance was observed on Puente Ave and the GWTP was secured by a fence surrounding the perimeter. Mr. Ortiz, Water Treatment and Supply Superintendent, and Mr. Zampiello, Operations and Maintenance Superintendent, mentioned that trespassing by transients was a minor concern as the plant is located adjacent to the river wash. Mr. Ortiz noted that they had a motion camera alarm system, and the building facilities are all securely locked, some with padlocks. Mr. Zampiello also noted that they have do have at least one operator that visits the plant 7 days a week.

The participants then walked to the control room where the Mr. Luong asked the LPVCWD representatives a series of general questions relating to potential challenges, emergency plans and the overall resiliency relating to plant operations. Mr. Ortiz and Mr. Zampiello noted that the Environmental Response Plan (ERP) was last updated in 2021 and includes plans in the event of a natural disaster emergency. In light of COVID-19, Mr. Ortiz and Mr. Zampiello stated there have been some cases where staff self-isolates but nothing of major concern. Additionally, Mr. Zampiello stated they have a good rapport with their suppliers and have not had any supply chain issues. In the event water levels continue to decline, the water district representatives stated they had no concerns as the pumps are set at the current depth but would retool the pumps if necessary as they have the capacity to go further down. Mr. Ortiz and Mr. Zampiello noted there were no periods of significant downtime for the GWTP. Mr. Ortiz and Mr. Zampiello stated that their target flow rate of 2,500 GPM was generally met, which exceeds their minimum requirement of 2,250 gpm.

No concerns were noted during the inspection.

Valley County Water District

Two driveway entrances were observed on Lante Ave., and the treatment plant was secured by a fence. Inside the control room, the treatment plant is manned seven days a week during working hours and has 16 security cameras. Ms. Robinson, Water Resources Manager, noted that the computers with the control systems are separate and do not have internet connections.

Ms. Robinson stated that the Environmental Response Plan is updated annually, which Mr. Luong confirmed with the physical 2022 copy. Ms. Robinson then noted that the target flow rate of the extraction wells is 6,000 gpm, which they have been unable to meet due to ongoing concerns with the plant's aging infrastructure. The GWTP currently runs at around 4,500 gpm from wells 1-4 and 1-1. Well 1-3 is offline and well 1-2 is inactive. Ms. Robinson and Mr. Moss stated that the continuous ion exchange system to treat nitrate was the biggest challenge the treatment plant faced due to the intensive maintenance required. Ms. Robinson added that the air strippers have issues with calcification and have to be maintained routinely to remove the built-up calcium.

No other concerns were noted during the inspection.

5. Technical Assessment

5.1. Question A: Is the remedy functioning as intended by the decision documents?

Yes, the remedy is functioning as intended by the decision documents. The remedy includes limiting contaminant migration and reducing contaminant concentrations in groundwater through the operation of five different groundwater extraction and treatment systems located in two subareas of the site. The groundwater model is the primary tool for assessing hydraulic capture. The model and other lines of evidence show the remedy is limiting contaminant migration. The treatment systems are effectively

removing contaminants from groundwater based on the calculated mass removed and post-treatment monitoring results.

The operation and maintenance of the extraction and treatment systems has been effective. Several treatment systems have undergone maintenance and/or system upgrades that have temporarily reduced production rates. Some of these upgrades and/or maintenance activities have been undertaken to optimize plant operations to reach EPA's target extraction rates. Valley County Water District has struggled to meet the target extraction rate due to equipment problems, and difficulty getting replacement parts.

5.2. Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives Used at the Time of Remedy Selection Still Valid?

Yes. The exposure assumptions, toxicity data, and remedial action objectives used at the time of remedy selection are still valid. There have been several changes to drinking water standards since the ROD was signed; however these changes do not impact remedy protectiveness as discussed below.

The drinking water standards have changed for chloroform, toluene and ethylbenzene. Chloroform is now regulated with bromoform, bromodichloromethane, and dichlorobromomethane regulated as total trihalomethanes at both the state and federal level. Ethylbenzene and toulene drinking standards are now lower than the ROD standards. The water purveyors are required to meet California drinking water standards as part of their Division of Drinking Water potable water permits; thus there is no impact on protectiveness.

Acetone, carbon disulfide, and 1,2,3-trichloropropane did not have California or Federal drinking water standards when the 1994 ROD and 1999 Explanation of Significant Differences were issued. California has since issued drinking water standards for carbon disulfide (160 µg/L) and 1,2,3-trichloropropane (0.005 µg/L). The Valley County Water District added liquid activated granulated carbon to treat 1,2,3-trichloropropane as part of an amended permit to provide potable water from the California State Water Resources Control Board Division of Drinking Water. 1,4-dioxane did not have California or Federal drinking water standards when the 1999 Explanation of Significant Differences was issued. EPA selected the California Notification Levels as a containment criteria and discharge goals for 1,4-dioxane. The Notification Level for 1,4-dioxane has since decreased from 3 µg/L to 1 µg/L.

As noted above, the water purveyors are required to meet drinking water standards and so, there is no impact to protectiveness by this change.

A California drinking water standard for perchlorate has been developed since the 1999 Explanation of Significant Differences, which is below the Notification Level listed in the Explanation of Significant Differences. Each of the groundwater treatment systems includes an ion exchange treatment system for perchlorate and the water purveyors are required to meet drinking water standards, which include the lower drinking water standard.

5.3. *Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?*

No other information has come to light that could call into question the protectiveness of the remedy at the Site.

6. Issues/Recommendations

There were no issues and recommendations identified in this Five-Year Review.

6.1. *Other Findings*

In addition, the following are recommendations that do not affect current and/or future protectiveness and were identified during the Five-Year Review:

- As noted in the Site Inspection, Well B5B has been down for 1.5 years, and therefore the San Gabriel Valley Water Company B5 has not been able to meet their target flow rate of 7,000 gpm.
- Although contaminant concentrations in Subarea 1 have decreased significantly, the Valley County Water District has struggled to meet the target extraction rate. Recent developments suggest that the target rates should be reevaluated.
- Future alternative or green power sources unconnected to the regional electrical grid should be evaluated to reduce the vulnerability of the Site remedy to climate change by increasing resiliency of the well pumps and/or mechanical water treatment equipment.

7. Protectiveness Statement

Table 6. Protectiveness Statement

Protectiveness Statement(s)
Protectiveness Determination: Protective
Protectiveness Statement: The remedy at the San Gabriel Valley Area 2 Superfund Site is protective of human health and the environment. The extraction and treatment systems in place remove groundwater contaminants and limit further contaminant migration.

8. Next Review

The next Five-Year Review report for the San Gabriel Valley Area 2 Superfund Site is required five years from the completion date of this review.

Appendix A: List of Documents Reviewed

Auffhammer, Maximilian. (University of California, Berkeley and NBER). 2018. Climate Adaptive Response Estimation: Short and Long Run Impacts of Climate Change on Residential Electricity and Natural Gas Consumption Using Big Data. California's Fourth Climate Change Assessment. Publication number: CCCA4-EXT-2018-005

Baldwin Park OU Cooperating Respondents 2021. January 2021 Monthly Progress Report for the Baldwin Park Operable Unit. February 25, 2021.

Baldwin Park OU Cooperating Respondents 2021. February 2021 Monthly Progress Report for the Baldwin Park Operable Unit. March 25, 2021.

Baldwin Park OU Cooperating Respondents 2021. March 2021 Monthly Progress Report for the Baldwin Park Operable Unit. April 23, 2021.

Baldwin Park OU Cooperating Respondents 2021. April 2021 Monthly Progress Report for the Baldwin Park Operable Unit. May 25, 2021.

Baldwin Park OU Cooperating Respondents 2021. May 2021 Monthly Progress Report for the Baldwin Park Operable Unit. June 25, 2021.

Baldwin Park OU Cooperating Respondents 2021. June 2021 Monthly Progress Report for the Baldwin Park Operable Unit. July 23, 2021.

Baldwin Park OU Cooperating Respondents 2021. July 2021 Monthly Progress Report for the Baldwin Park Operable Unit. August 25, 2021.

Baldwin Park OU Cooperating Respondents 2021. August 2021 Monthly Progress Report for the Baldwin Park Operable Unit. September 24, 2021.

Baldwin Park OU Cooperating Respondents 2021. September 2021 Monthly Progress Report for the Baldwin Park Operable Unit. October 25, 2021.

Baldwin Park OU Cooperating Respondents 2021. October 2021 Monthly Progress Report for the Baldwin Park Operable Unit. November 24, 2021.

Baldwin Park OU Cooperating Respondents 2022. 2021 Annual Progress Report for the Baldwin Park Operable Unit. April 30, 2022

Burillo, Daniel, Mikhail Chester, Stephanie Pincetl, Eric Fournier, Daniel Walton, Fengpeng Sun, Marla Schwartz, Katharine Reich, Alex Hall. (University of California Los Angeles). 2018. Climate Change in Los Angeles County: Grid Vulnerability to Extreme Heat. California's Fourth Climate Change Assessment, California Energy Commission. Publication number: CCCA4-CEC-2018-013

Dale, Larry, Michael Carnall, Gary Fitts, Sarah Lewis McDonald, and Max Wei. (Lawrence Berkeley National Laboratory). 2018. Assessing the Impact of Wildfires on the California Electricity Grid. California's Fourth Climate Change Assessment, California Energy Commission. Publication Number: CCCA4-CEC-2018-002.

EPA (U.S. Environmental Protection Agency), 1994. Record of Decision, Baldwin Park Operable Unit, San Gabriel Valley Superfund Sites. March 31, 1994.

EPA 1999. Explanation of Significant Differences. May 1999.

EPA 2009. Revised Assessment Guidance for Perchlorate January 8, 2009.

EPA 2017. San Gabriel Valley Groundwater Cleanup Superfund Progress Report. May 2017.

EPA 2017. Third Five-Year Review Report for San Gabriel Valley Area 2 Superfund Site, Los Angeles County, California. August 17, 2017.

EPA 2021. San Gabriel Valley Superfund Sites Progress Update. May 2021.

EPA 2022. EPA's Plan to Address Perchlorate Contamination Fact Sheet. March 2022.

Government Accounting Office. 2019. Interactive Map: *https://files.gao.gov/multimedia/gao-20-73/interactive/index.html* Accessed April 20, 2022.

Geosyntec 2017. 2016 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites. May 12, 2017.

Geosyntec 2018. 2017 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites. April 30, 2018.

Geosyntec 2019. 2018 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites. May 14, 2019.

Geosyntec 2020. 2019 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites. April 30, 2020.

Geosyntec 2021. Response to EPA Comments on "2019 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites, Los Angeles County, California". May 14, 2021.

Geosyntec 2021. 2020 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites. April 30, 2021.

Geosyntec 2022. 2021 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites. April 30, 2022.

Hall, Alex, Neil Berg, Katharine Reich. (University of California, Los Angeles). 2018. Los Angeles Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-007

He, Minxue & Schwarz, Andrew & Lynn, Elissa & Anderson, Michael. (2018). Projected Changes in Precipitation, Temperature, and Drought across California's Hydrologic Regions in the 21st Century. Climate. 6. 31. 10.3390/cli6020031.

Langridge, Ruth, Stephen Sepaniak, Amanda Fencl, Linda-Estelí Méndez (University of California, Santa Cruz). 2018. Adapting to Climate Change and Drought in Selected California Groundwater Basins: Local Achievements and Challenges, California's Fourth Climate Change Assessment. Publication number: CCCA4-EXT-2018-006.

U.S. Department of Interior Bureau of Reclamation, Los Angeles Department of Public Works, and Los Angeles County Flood Control District 2016. Summary Report. Los Angeles Basin Study. November 2016.

Appendix B: Site Chronology

Event	Date
Initial discovery of problem or contamination (volatile organic compounds detected in drinking water supply well)	1979
NPL listing (final)	May 8, 1984
Feasibility Study Report (included Remedial Investigation results)	April 2, 1993
Proposed Plan	May 1993
ROD signature	Mar 31, 1994
Explanation of Significant Differences	May 1999
EPA Orders Potentially Responsible Parties to Implement Remedial Design and Remedial Action	June 2000
EPA Amends June 2000 Order	Feb 2002
Third party agreement between potentially responsible parties and local water agencies ("BPOU Project Agreement")	Mar 2002
Remedial design La Puente Valley County Water District	Jul 21, 2000, to Sep 26, 2002
Remedial design San Gabriel Valley Water Company B6	Jul 21, 2000, to Mar 31, 2003
Remedial design Valley County Water District Lante	Jul 21, 2000, to Aug 08, 2003
Remedial design San Gabriel Valley Water Company B5	Jul 21, 2000, to Sep 29, 2004
Remedial action starts La Puente Valley County Water District	Sep 26, 2002
Remedial action starts San Gabriel Valley Water Company B6	Mar 31, 2003
Remedial action starts Valley County Water District Lante	Aug 08, 2003
Remedial action starts San Gabriel Valley Water Company B5	Sep 29, 2004
California State Water Resources Control Board Division of Drinking Water (DDW, formerly part of the California Department of Public Health) issues drinking water permit amendments to allow treated water to be used as drinking water supply (OU 02)	Feb 2001 (operation of air stripping, ion exchange and advanced oxidation), May 2002 (operation of replacement advanced oxidation system), December 2008 (operation of Well 5), December 2009 (construction and startup testing of single pass ion exchange)
DDW issues drinking water permit amendments	June 2005 (treatment plant operation with backup wells), Feb 2006 (operation with four new wells)
DDW issues drinking water permit amendment	Nov 2005 (operation of air stripping, ion exchange, and advanced oxidation), July 2007 (addition of liquid-phase granular activated carbon)
DDW issues drinking water permit amendment	April 2008 (treatment plant), July 2009 (City of Industry [COI] Well 5)
First FYR Report	Sep 27, 2007
Second FYR Report	Sep 24, 2012
Remedial Action Upgrade San Gabriel Valley Water Company B6– single pass ion exchange treatment began perchlorate removal (replacing regenerable ISEP system)	September 2014

Event	Date
Remedial Action Upgrade California Domestic Water Company subproject – EPA established target pumping rate to ensure hydraulic control	January 2015
Remedial Action Upgrade Valley County Water District Lante - single pass ion exchange treatment began perchlorate removal (replacing regenerable ISEP system); ISEP system reconfigured for nitrate removal	July 2016
BPOU Project Agreement extended for ten years	May 2017
Third FYR Report	September 2017
Valley County Water District Lante - Arrow Well rehabilitated and startup testing for new permit.	August 2017-December 2019
San Gabriel Valley Water Company B5 – pilot test for liquid granular reactivated carbon	2017-2018
La Puente Valley County Water District - Temporary approval of 45 to 1 air to water ratio for Air Stripper #2	2018
California Domestic Water Company installs Well 2A as replacement for Well 2	2018
San Gabriel Valley Water Company B6 receives grant funding to test UV technologies for water treatment	January 2018
DDW issues drinking water permit amendment for San Gabriel Valley Water Company B6 - new ion exchange system for treatment of nitrate and for existing perchlorate system (installed Sept 2014)	May 2018
California Domestic Water Company Well 2A comes online	2020

Appendix C: Applicable or Relevant and Appropriate Requirements Assessment

Section 121 (d)(2)(A) of Comprehensive Environmental Response, Compensation, and Liability Act specifies that Superfund remedial actions must meet any Federal standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate requirements (ARARs). ARARs are those standards, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Comprehensive Environmental Response, Compensation, and Liability Act site.

Changes (if any) in ARARs are evaluated to determine if the changes affect the protectiveness of the remedy. Each ARAR and any change to the applicable standard or criterion are discussed below.

Chemical-specific ARARs identified in the 1994 Record of Decision (ROD) and 1999 Explanation of Significant Differences (ESD) for groundwater were evaluated (Table D-1). Three compounds now have ROD standards that are above their respective current maximum contaminant level (MCL). The federal and state MCLs for bromoform, chloroform, bromodichloromethane, and dichlorobromomethane were removed and are now regulated as total trihalomethanes (THM). The federal and state MCL for total THM is 80 micrograms per liter (µg/L). The two remaining compounds, ethylbenzene and toluene, have ROD standards that are less stringent than the California MCL, but are equal to or less than the federal MCL. The water purveyors are required to meet California MCLs, which indicates that there is no impact on protectiveness.

Acetone, carbon disulfide, and 1,2,3-trichloropropane did not have California MCLs, Federal MCLs, or ROD standards when the 1994 ROD and 1999 ESD were issued. California has since issued MCLs for carbon disulfide (160 µg/L) and 1,2,3-trichloropropane (0.005 µg/L). The Valley County Water District added liquid activated granulated carbon to treat 1,2,3-trichloropropane as part of an amended permit to provide potable water from the California State Water Resources Control Board Division of Drinking Water. As noted above, the water purveyors are required to meet drinking water standards and so, there is no impact to protectiveness by this change.

Cleanup levels for 1,4-dioxane, NDMA, and perchlorate were based on Notification levels (e.g. not ARAR-based) and are evaluated in the Toxicity Analysis (Appendix E).

Table C-1. Summary of Groundwater Chemical-Specific ARAR Changes

Contaminants of Concern	1994 ROD (µg/L)	1999 ESD (µg/L)	Basis	Current Maximum Contaminant Level (MCL) or Notification Level (NL) (µg/L)		MCL or NL Changed?
				State	Federal	
Acetone	—	—	—	—	—	
Benzene	1	—	State	1	5	No
Carbon Disulfide	—	—	State	160	—	Yes
Carbon Tetrachloride	0.5	—	State	0.5	5	No
Chloroform[3]	100	—	Federal	80	80	Yes
1,1-Dichloroethane	5	—	State	5	—	No
1,2-Dichloroethane	0.5	—	State	0.5	5	No
1,1-Dichloroethene	6	—	State	6	7	No
cis-1,2-Dichloroethene	6	—	State	6	70	No
trans-1,2-Dichloroethene	10	—	State	10	100	No
Ethylbenzene	680	—	State	300	700	Yes
Methylene Chloride	5	—	Federal	5	5	No
Tetrachloroethene	5	—	Federal	5	5	No
Toluene	1000	—	State	150	1,000	Yes
1,2,3-Trichloropropane	—	—	State	0.005	—	Yes
1,1,1-Trichloroethane	200	—	Federal	200	200	No
Trichloroethene	5	—	Federal	5	5	No
Xylene	1,750	—	State	1,750	10,000	No
Perchlorate	—	18	State	6	—	Yes
NDMA	—	0.002	State	0.01	—	Yes
1,4-dioxane	—	3	State	1	—	Yes

Note: MCL and Notification Levels reviewed in January 2022.

The groundwater at the Baldwin Park Operable Unit is an existing and potential source of drinking water. However, since the Baldwin Park Operable Unit remedial action is an interim action, chemical-specific cleanup requirements for the aquifer which would be ARARs for a final remedy are not ARARs for this action. These include attaining MCLs and non-zero MCLGs (maximum contaminant level goals). Nevertheless, EPA has determined that for the treatment plant effluent from the Baldwin Park OU, the Federal Primary and any Secondary Maximum Contaminant Levels (MCLs) for volatile organic compounds (VOCs) and any more-stringent State of California Primary MCLs for VOCs are relevant and appropriate and must be attained regardless of the end use or discharge method for the treated water. In addition, treated water that is discharged to surface water shall meet National Pollutant Discharge Elimination System (NPDES) discharge requirements.

For treated water, which will be put into a public water supply, all legal requirements for drinking water in existence at the time that the water is served must be met because EPA considers serving of the water to the public (at the tap) to be off-site. Complying with all applicable requirements for drinking water at the tap also requires attainment of the MCL for nitrate prior to serving the water to the public. Since these are not ARARs, these requirements are not "frozen" or fixed as of the date of the ROD. Rather, they can change over time as new laws and regulations applicable to drinking water change. In any water to be served as drinking water, the concentrations of perchlorate, NDMA, and 1,4-dioxane will be reduced to

below action levels (now called notification levels) or, if promulgated, MCLs in existence at the time the water is served and any groundwater recharged into the aquifer will be treated to levels below action levels or, if promulgated, MCLs for perchlorate, NDMA, and 1,4-dioxane.

Federal and State laws and regulations other than the chemical-specific ARARs discussed in Table D-1 that have been promulgated or changed since the 1994 ROD and 1999 ESD are described in Table D-2. There have been no revisions to laws or regulations that affect the protectiveness of the remedy.

The following action- or location-specific ARARs have not changed in the past five years, and therefore do not affect protectiveness:

- Safe Drinking Water Act National Drinking Water Standards (CFR 300.430(f) (5))
- Title 22, California Code of Regulations Sections 64435, 64444, and 64401 (except sections noted below)
- California Health & Safety Code Section 116455
- Water Quality Control Plan (Basin Plan) for the Los Angeles Region (except as noted below)
- Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)
- California Water Code Section 13263
- Title 22, California Code of Regulations Sections 66261 through 66268 (except sections noted below)
- Clean Air Act Rules and Regulations of the South Coast Air Quality Management District (SCAQMD) (42 U.S.C. section 7401 et seq. SCAQMD Regulation XIV, Rule 1401 SCAQMD Rules 401, 402, 403)

Table C-2. Summary of ARAR Changes for Site in the Past Five Years

Requirement and Citation	Document	Description	Effect on Protectiveness	Comments	Recent Amendment Date
Protection of the Environment (40 CFR 122 and 123)	1994 ROD	National Pollutant Discharge Elimination System and State Requirements	Changes do not affect protectiveness.	Postpones the compliance deadlines for implementation of Phase 2 of the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule ("NPDES eRule"). The NPDES eRule requires EPA and states to modernize Clean Water Act (CWA) reporting. This final rule also provides states with additional flexibility to request additional time as needed. Further, this final rule promulgates clarifying changes to the NPDES eRule and eliminates some duplicative or outdated reporting requirements. Taken together, these changes are designed to save the NPDES authorized programs considerable resources, make reporting easier for NPDES-regulated entities, streamline permit renewals, ensure full exchange of NPDES program data between states and EPA, enhance public transparency, improve environmental decision-making, and protect human health and the environment.	November 2, 2020
Protection of the Environment(40 CFR 124)	1994 ROD	Public Notice Requirements	Changes do not affect protectiveness	Allowing permitting authorities to provide public notice of permitting actions for NPDES major individual and general permits on the permitting authority's publicly available website in lieu of the newspaper publication requirement	August 21, 2020
Protection of the Environment(40 CFR 131)	1994 ROD	Water Quality Standards	Changes do not affect protectiveness	Federal Aluminum Aquatic Life Criteria Applicable to Oregon	March 19, 2021
Title 22, California Code of Regulations Sections (22 CCR 64444)	1994 ROD	Maximum contaminant levels- organic chemicals for primary drinking water	Changes do not affect protectiveness	Amendment of first paragraph, table and Note filed 12-14-2017; operative 12-14-2017 pursuant to Government Code section 11343.4(b)(3) (Register 2017, No. 50). The amendments set an MCL for 1,2,3 – Trichloropropane.	December 14, 2017
Title 22, California Code of Regulations Sections (22 CCR 66264.90)	1994 ROD	Applicability of water quality monitoring and response programs for permitted facilities	Changes do not affect protectiveness.	New subsection (i) and amendment of Note filed 10-31-2018: (i) The regulations in this article apply to all owners and operators subject to the requirements of Section 66270.1(c)(7), when the Department issues either a post closure permit or an enforceable document (as defined in Section 66270.1(c)(7)) at the facility. When the Department issues an enforceable document, references in this article to "in the permit" mean "in the enforceable document." Note Authority cited: Sections 25150, 25159, 25159.5, 25245, 25247 and 58012, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; and 40 CFR Section 264.90.	January 1, 2019

Requirement and Citation	Document	Description	Effect on Protectiveness	Comments	Recent Amendment Date
Title 22, California Code of Regulations Sections (22 CCR 66264.101)	1994 ROD	Corrective Action for Waste Management Units for water quality monitoring and response programs for permitted facilities		Amendment of section and Note filed 10-24-2018 regarding financial assurance for corrective action.	January 1, 2019
Title 22, California Code of Regulations Sections (22 CCR 66264.16)	1994 ROD	Personnel Training	Changes do not affect protectiveness.	Amendment of section and Note filed 10-24-2018; operative 1-1-2019 (Register 2018, No. 43). Amendments concern training provided to personnel.	January 1, 2019
Title 22, California Code of Regulations Sections (22 CCR 66264.110)	1994 ROD	Applicability of Closure and Post-Closure	Changes do not affect protectiveness.	New subsection (c) and amendment of Note filed 10-31-2018; operative 1-1-2019 (Register 2018, No. 44). (c) The regulations in this article apply to all owners and operators subject to the requirements of Section 66270.1(c)(7), when the Department issues either a post closure permit or an enforceable document (as defined in Section 66270.1(c)(7)) at the facility. When the Department issues an enforceable document, references in this article to "in the permit" mean "in the enforceable document."	January 1, 2019
Title 22, California Code of Regulations Sections (22 CCR 66264.121)	1994 ROD	Post-closure Requirements for Facilities that Obtain Enforceable Documents in Lieu of Post-closure Permits	Changes do not affect protectiveness.	New section filed 10-31-2018; operative 1-1-2019 (Register 2018, No. 44). Section describes requirements for facilities that obtain enforceable documents in lieu of post-closure permits.	January 1, 2019
Water Quality Control Plan (Basin Plan) for the Los Angeles Region	1994 ROD	Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties	Changes do not affect protectiveness.	Amendments to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Fresh, Estuarine and Marine Waters Designated for Water Contact Recreation, based on the Statewide Bacteria Provisions.	February 13, 2020
Health and Safety Code Sections 4010.1(b), 4026(c)	1994 ROD	California Health and Safety Code	Changes do not affect protectiveness	Section 4010.1(b) was renumbered as Health & Safety Code § 116275. Section 4026(c) was repealed.	Repealed

Appendix D. Toxicity Assessment

Chemical-specific ARARs for most Site contaminants identified in the 1994 Record of Decision (ROD) or 1999 Explanation of Significant Differences for groundwater air were evaluated (Table D-1). In the 1999 Explanation of Significant Differences when 1,4-dioxane, NDMA, and perchlorate were added as Site contaminants, the State of California Water Resources Control Board, Division of Drinking Water (former Department of Health Services) Notification Levels were established as a containment criteria and discharge goals. The Notification Level for NDMA has not changed, but the Notification Level for 1,4-dioxane has since decreased from 3 µg/L to 1 µg/L. However, since it is a Notification Level[1], it is not a risk-based level, and the change should not impact protectiveness.

A California drinking water standard for perchlorate (6 µg/L) has been developed since the 1999 Explanation of Significant Differences, which is below the Notification Level (18 µg/L). In March 2022, the EPA reviewed and affirmed the July 2020 decision to withdraw the 2011 regulatory determination and make a final determination to not issue a national perchlorate regulation. Specifically, the EPA determined that perchlorate does not meet the criteria for regulation as a drinking water contaminant under the Safe Drinking Water Act. EPA issued a 2009 memo recommending the use of 15 µg/L as a preliminary remediation goal for Superfund sites in states without perchlorate drinking water standards (EPA, 2009). Currently, the EPA Regional Screening Level for perchlorate in tap water is 14 µg/L, based on toxicity values in the Integrated Risk Information System. Each of the groundwater treatment systems includes an ion exchange treatment system for perchlorate and the water purveyors are required to meet California drinking water standards.

[1] Notification levels are health-based advisory levels established by the Division of Drinking Water for chemicals in drinking water that lack maximum contaminant levels. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply. The level at which DDW recommends removal of a drinking water source from service is called the "response level." The law's notification requirements apply to:

- wholesale water systems, who must notify their governing bodies and the water systems that are directly supplied with that drinking water.
- retail water systems, who must notify their governing bodies and the governing bodies of any local agencies (i.e., city or county, or a city and county) whose jurisdictions include areas supplied with their drinking water.
- wholesale and retail water systems regulated by the California Public Utilities Commission, who must also notify the commission

Appendix E: Public Notice

DMV

Written test now offered online

The 'driver's license knowledge' exam can also be substituted with a 45-minute internet course

By Hunter Lee
hlee@scng.com

The Department of Motor Vehicles' written test can now be taken online — or skipped all together for some by replacing it with a 45-minute, online course.

Generally, the test that the DMV calls the "driver's license knowledge test," is required for those getting their license for the first time and motorists every five years after turning 70 years old.

For drivers, the agency says, tackling the test at home will save significant time at the DMV field office, which still must be visited by many to get a photo and thumbprint taken and to complete a vision exam.

(Because of the pandemic, most drivers 70 and older can renew totally online this year.)

"This is one more example of how the DMV is modernizing to add more convenient services online that used to be only available in an office," DMV Director Steve Gordon said in a statement. "We continue to incorporate ways to bring DMV services to our customers when and where they want."

The online test is offered in 35 languages and will look roughly the same as an in-person test, said Chris Orrock, a DMV spokesman. The test is available between 8 a.m. and 4 p.m. Monday through Friday, excluding state holidays.

Participants verify their identity by submitting a photo of themselves to the DMV, Orrock said. A webcam is required for test takers, along with a browser extension that must be installed on their computer; sound and keyboard entries are monitored to ensure honesty.

It can't be taken on a tablet or mobile device. Customers who fail the test twice must go to a DMV office and pass it in person.

The online course can be taken on a computer, laptop, tablet or mobile device and is offered around the clock, though it is currently available only in English. It includes quizzes and takes approximately 45 minutes. This option is not offered to those getting their driver's license for the first time.

For information: dmv.ca.gov.

MINDY SCHAUER — STAFF PHOTOGRAPHER

For drivers, the agency says, tackling the test at home will save significant time at the DMV field office, which still must be visited by many taking the test or course to get a photo and thumbprint taken and complete a vision exam.

EPA WOULD LIKE TO HEAR FROM YOU ABOUT THE SAN GABRIEL VALLEY AREA 2/BALDWIN PARK SUPERFUND CLEANUP

The U.S. Environmental Protection Agency (EPA) has started the latest of our periodic reviews of the interim cleanup plan for the San Gabriel Valley Area 2 (Baldwin Park) Superfund site. This review will evaluate if the cleanup plan is working as intended.

Under federal law, we must review our cleanup plans every five years if:

- a cleanup takes more than five years to complete; or
- hazardous waste is still on-site.

We completed the last review in 2017. The review found the cleanup plan was working as we intended.

What is Included in the Review?

The 2022 review includes:

- an inspection of the site and technologies used for the cleanup;
- a review of site data and maintenance records; and
- a review of any new laws or requirements that could affect the cleanup.

EPA Would Like to Hear from You!

We would like to interview community members about how you think the site cleanup is going. **If you would like to learn more about the site, comment about the cleanup and/or be interviewed, please call Wayne Praskins or Romie Duarte (*hispanohablante*) before April 30, 2022:**

- Wayne Praskins, EPA Project Manager, at (415) 972-3181 or praskins.wayne@epa.gov
- Romie Duarte, EPA Community Involvement Coordinator, at (213) 244-1801 or duarte.romie@epa.gov

Where Can I Learn More?

Visit our webpage at www.epa.gov/superfund/sangabrielbaldwinpark for more information. We also set up an information repository with key site documents and reports at this location:

Baldwin Park Library
4181 Baldwin Park Boulevard
Baldwin Park, CA 91706
Phone: (626) 962–6947
Please call for current hours of operation.

We will complete the Five-Year Review report no later than September 30, 2022. When complete, we will post a copy on the site's webpage and send a copy to the site information repository listed above.

Background

The San Gabriel Valley Area 2 site is one of four Superfund groundwater cleanup sites in San Gabriel Valley. Covering eight square miles, this site covers groundwater under portions of the cities of Azusa, Irwindale, Baldwin Park, West Covina, La Puente and City of Industry. For more information, please see site website above.

A LA EPA LE GUSTARÍAESCUCHAR DE USTED SOBRE LA LIMPIEZA DE SAN GABRIEL VALLEY AREA 2/BALDWIN PARK

La Agencia de Proteccion Ambiental de los EE.UU. (EPA, por sus siglas en inglés) ha comenzado la siguiente revision periódica del plan de limpieza provisional para el Sitio Superfund San Gabriel Valley Area 2 (Baldwin Park). Este revisión evaluará si el plan de limpieza está funcionando como se esperaba.

Bajo la ley federal, debemos revisar nuestros planes de limpieza cada cinco años si:

- una limpieza toma más de cinco años para completar; o
- donde los residuos peligrosos todavía permanecen en el sitio.

Terminamos el último revisión en 2017. La revisión encontró que el plan de limpieza estaba trabajando como esperábamos.

¿Qué incluye la revisión?

La revisión de 2022 incluye:

- inspección del sitio y las tecnologías utilizadas para la limpieza;
- revisión de los datos del sitio y los registros de mantenimiento; y
- una revisión de nuevas leyes o requisitos que podrían afectar la limpieza.

¡A la EPA le gustaría saber de usted!

Nos gustaría entrevistar a miembros de la comunidad sobre cómo creen que va la limpieza del sitio. **Si le gustaría aprender más información sobre el sitio, comentar sobre la limpieza y/o ser entrevistado, por favor llame a Wayne Praskins o Romie Duarte (hispanohablante) antes del 30 de abril de 2022:**

- Wayne Praskins, Gerente de Proyectos de la EPA, a (415) 972-3181 o praskins.wayne@epa.gov
- Romie Duarte, Coordinadora de Participación Pública de la EPA, a (213) 244-1801 o duarte.romie@epa.gov

¿A dónde puedo obtener más información?

Visite nuestra página web a www.epa.gov/superfund/sangabrielbaldwinpark para más información. También tenemos un depósito de información con documentos e informes claves del sitio en el siguiente locat

Baldwin Park Library
4181 Baldwin Park Boulevard
Baldwin Park, CA 91706
Teléfono: (626) 962-6947
Llame para conocer el horario de atención.

Terminaremos el Informe de Cada Cinco Años a más tardar el 30 de septiembre de 2022. Cuando esté completado, publicaremos una copia en la página web del sitio y enviaremos una copia al depósito de información de sitio mencionado anteriormente.

Antecedentes

El sitio de San Gabriel Valley Area 2 es uno de cuatro sitios de limpieza de agua subterránea en el valle de San Gabriel. Cubriendo ocho millas cuadradas, este sitio cubre el agua subterránea debajo de porciones de las ciudades de Azusa, Irwindale, Baldwin Park, West Covina, La Puente, y City of Industry. Para obtener más información, por favor consulte la página web del sitio mencionado anteriormente.

CNS#3556291

Appendix F: Interview Forms

Five-Year Review Interview Record				
Site:	San Gabriel Valley Area 2		**EPA ID No:**	
Interview Questionnaire Date:				
(Fill in the components below, one line per person if multiple persons are providing responses)				
Name	**Organization**	**Title**	**Telephone**	**Email**
Randy Schoellerman	SGBWQA	Executive Director	626-338-5555	randy@wqa.com
Dan Colby	SGBWQA	Assistant Executive Director/Senior Project Manager	626-338-5555	dan@wqa.com

(Record responses to the questions below)

1) Historically, what has the WQA's role been in the project? What is WQA's current and expected future role?

In the past, the WQA developed data to define the characteristics of the plume and constructed treatment systems at Valley County Water District's Arrow Well and Big Dalton well sites. WQA also worked with stakeholders to propose a central treatment facility solution for the operable unit. Ultimately, the WQA joined litigation against the operable unit's responsible parties which resulted in the BPOU Project Agreement and its subsequent renewal in 2017. WQA has provided over $48M in federal funding for the projects under the agreement. Currently, in addition to general project oversight as a party to the agreement, WQA manages sites access agreements and renewals for the numerous monitoring wells in the operable unit. Additionally, WQA manages the spare parts inventory and processes reimbursement payments made from the CRs to the purveyors. WQA's future role, including those activities outlined above, is to be an integral partner in the upcoming BPOU Project Agreement renegotiations to ensure the continued remediation of the BPOU groundwater contamination.

2) Do you feel that there is adequate communication between the WQA, Main San Gabriel Basin Watermaster, water purveyors, EPA, and other agencies managing or coordinating cleanup efforts at the site?

Yes.

3) Do you feel that adequate efforts are made to inform the community about the site's activities and progress? Do you have any comments or suggestions on EPA's efforts?

Part of WQA's mission is to inform the public of groundwater remediation activities throughout the San Gabriel Basin. This is accomplished via numerous publications in local print media and various social media platforms. I think EPA could provide more updates on its activities by way of more frequently published Fact Sheets.

4) Are you aware of any complaints, violations, or community concerns about the site in the last few years?

No.

5) What is your overall impression of the project? Do you have any comments, suggestions, or recommendations?

Good.

Additional Site-Specific Questions

Five-Year Review Interview Record				
Site:	San Gabriel Valley Area 2		**EPA ID No:**	
Interview Questionnaire Date:				
(Fill in the components below, one line per person if multiple persons are providing responses)				
Name	**Organization**	**Title**	**Telephone**	**Email**
Christine Bucklin	DTSC	Senior Engineering Geologist	714-484-5393	Christine.Bucklin@dtsc.ca.gov
(Record responses to the questions below)				
1) In recent times, what has DTSC's involvement been in the project? *DTSC receives documents related to corrective measures and design, operation and maintenance and performance evaluation of the interim remedy. DTSC also receives monthly progress reports via email.* 2) Do you feel that DTSC is adequately informed about the site's activities and progress? *Yes, DTSC is provided documents and in some instances details of upcoming meetings with the stakeholders, but has not been invited to quarterly EPA mtgs.* 3) Are you aware of any complaints, violations, or community concerns about the site in the last few years? Do you have any comments or suggestions on efforts by EPA, the San Gabriel Basin Water Authority, or others to inform the community about the site's activities and progress? *DTSC is not aware of any concerns*. 4) What is your overall impression of the project? Do you have any comments, suggestions, or recommendations? DTSC believes that the remedy continues to be effective				
Additional Site-Specific Questions				

Appendix G: Site Inspection Report and Photos

a. Date of Visit: August 3, 2022

b. Location: Baldwin Park, CA

c. Purpose: A site visit was conducted to visually inspect and document the conditions of the remedy, the site, and the surrounding area for inclusion into the Five-Year Review Report.

d. Participants:

Jeffrey Luong	USACE-SPL, Project Engineer
Raymond Chavira	EPA Region 9, Superfund Project Manager
David Towell	CH2M Hill, EPA Contractor
Sam Lo	Stetson Engineering, Project Engineer
Mayra Lopez	Stetson Engineering, Project Engineer
Che Venegas	CDWC, Director of Water Operations
Lynda Noriega	CDWC, President
Stephanie Alvarado	CDWC, Accounting and Office Manager
Oscar M. Ramos	SGVWC, Operations Manager
David Van	SGVWC, Superintendent
Daniel Moreno	SGVWC, Water Treatment Operator II
Christine Bucklin	DTSC, Geologist
Paul Zampiello	LPVCWD, Operations and Maintenance Superintendent
Cesar Ortiz	LPVCWD, Water Treatment and Supply Superintendent
Santiago Loera	LPVCWD, Water System Operator II
Tara Robinson	VCWD, Water Resources Manager
Eric Velazquez	VCWD, Water Treatment Superintendent
Erik Moss	VCWD, Lead Treatment and Production Operator
Scott Adams	VCWD, T4 Shift Operator
Aaron Sanchez	VCWD, T3 Treatment Operator

A site visit to the San Gabriel Area 2 Superfund Site was conducted on August 3, 2022. The participants toured the California Domestic Water Company (CDWC), San Gabriel Valley Water Company (SGVWC) B5, San Gabriel Valley Water Company B6, La Puente Valley County Water District (LPVCWD) and Valley County Water District (VCWD) treatment plants. The treatment plants are operated by water purveyors and are part of the remedy to prevent contaminant migration and limit contaminant exposure.

On Wednesday, August 3, 2022, Jeffrey Luong, USACE, met with EPA, and water company representatives at the five treatment plants. The weather was sunny, with clear skies and temperatures in the 70s Fahrenheit.

At each treatment plant, Jeffrey Luong and Ray Chavira asked representatives from the water companies general questions in regard to the remedy and Ground Water Treatment Plant (GWTP) operations over the past five years. The water company representatives then walked the participants through the different various parts of the treatment systems and identified any issues. Each section below identifies the approximate time at each location and observations, or issues noted at each of the locations.

California Domestic Water Company - 09:10 to 10:30

The inspection at CDWC began with introductions from EPA, USACE, and the water company representatives. Site security was the first topic that was discussed. One driveway entrance from Gilman Rd was observed and a fence along the perimeter secured the GWTP. Secondary fences were observed within the interior surrounding the three air stripper towers. No security cameras were observed at the main plant, and when asked whether any security concerns exist, Mr. Venegas noted that vandalism was a minor issue during the summer months, but no other major security concerns as the control rooms and buildings are securely locked. The participants made their way to the control room where the O&M manuals and dated as-builts/plans were observed. The SCADA monitor was not turned on at the time of the visit, but Mr. Venegas mentioned that SCADA was accessible on the phone.

Mr. Luong and Mr. Chavira then asked the CDWC representatives a series of general questions relating to potential challenges, emergency plans, and the overall resiliency relating to plant operations. Mr. Venegas and Ms. Noriega noted that the Environmental Response Plan (ERP) was updated in 2020 per the EPA Risk Resiliency Assessment which addressed floods as the GWTP was located on a flood plain. CDWC representatives noted there were no concerns for a flood, but in the unlikely event one was to occur, the GWTP would shut down and conditions would be evaluated prior to restarting operations. In light of COVID-19, CDWC representatives stated operational procedures were not affected and that the plant follows CDC and local guidelines. Mr. Venegas and Ms. Noriega noted that there were no major changes in components within the past five years and that the plant consistently meets or exceeds its intended flow extraction rate of 8,000 gallons per minute (gpm). In the event water levels continue to decline, the GWTP has already prepared with pumps at about 30 ft below ground surface (bgs) since 2015 in anticipation of drought levels. The biggest overall challenge the GWTP faces was whether the other GWTP plants operating upgradient continue to miss their target flow rates which would result in the need to expand the current GWTP system.

Mr. Venegas then explained and walked Mr. Luong through the various treatment plant processes, starting from the wet well influent (after Wells 5, 6, 3, and 10 are blended) to the three air stripper towers. The participants toured within interior fence surrounding the air stripper towers. Air Stripper #3 contained two carbon units, whereas Air Strippers #2 and #1 contained 1 carbon unit each. Mr. Venegas noted that carbon changeouts occur annually or whenever 4,200 lbs of VOCs are removed, the last one in June 2022. Chlorine is injected in the 36-inch line that connected to the 5M gallon reservoir, prior to being discharged to the distribution network in a 42-inch main.

At 1000 hours, all participants drove to the well field (Wells #3 and #14) where Mr. Luong and Mr. Venegas toured the ion exchange (IX) treatment, secured by a fence. Ten (10) Vessels in lead and lag

configuration were observed. The participants then toured the ultraviolet (UV) treatment system the two dual Trojan UVPHOX chambers were observed. Mr. Venegas explained that well #3 was piped to the southern UVPHOX system whereas the northern system was not operating as Well #14 was also not in operation. Graffiti was observed on the southern exterior face of the building at the time of the inspection.

San Gabriel Valley Water Company B5 – 10:40 to 11:40

Mr. Luong, Mr. Chavira, Mr. Towell, Mr. Lo, and Ms. Lopez met with San Gabriel Valley Water Company B5 representatives, Mr. Ramos, Operations Manager, and Mr. Van, Superintendent. One driveway entrance was observed from Cloverleaf Dr, and the GWTP was secured by a fence surrounding the perimeter. When asked about security concerns, Mr. Van mentioned that there have been break-ins by transients who have climbed over the fence and used the eyewash stations as well as to get over to the neighboring property. No other security concerns were mentioned, however, Mr. Ramos noted that the plant had plans to develop a cyber security assessment to protect against cyber security threats in the future. Mr. Ramos noted that their system does not rely on the internet but utilizes radio communications.

The participants then walked to the control room where the Mr. Luong and Mr. Chavira asked the SGVWC B5 representatives a series of general questions relating to potential challenges, emergency plans, and the overall resiliency relating to plant operations. Mr. Ramos and Mr. Van noted that the Environmental Response Plan (ERP), located at their HQ close by, included plans in the event of a natural disaster emergency. In light of COVID-19, Mr. Ramos and Mr. Van stated that the only challenges the GWTP faced was procurement of equipment and materials. Mr. Van noted that because of the lengthy lead time to procure materials, Well B5B has been down for 1.5 years, and therefore the GWTP has not been able to meet their target flow rate of 7,000 gpm. Mr. Van noted that the GWTP is already prepared in the event water levels continue to decline as they added 20 feet of piping in anticipation of potential drought levels.

Mr. Van then walked Mr. Luong throughout the treatment processes explaining that there is a total of three (3) on-site wells, Wells B5E, B5B (not in operation due to on-going repairs), B5D; and one off-site well, Industry Well No. 5. Mr. Van noted they installed a new pump assembly in 2019 for B5E. The three active wells lead to the liquid-phase granular activated carbon (LPGAC) system with 8 pairs of 20,000 lb carbon vessels in lead and lag configuration. After the LPGAC treatment, the influent gets filtered by a series of 10-micron filters before entering the IX system, consisting of eight (8) pairs of 424 cubic ft of resin vessels, to treat perchlorate. Changeouts for the LPGAC system was estimated to be around every 4-6 months based on sampling at the 50% port of the lag bed, whereas changeouts of the IX system was based on the lead effluent. After the IX system, the effluent is injected with peroxide prior to the Trojan UV treatment system located adjacent to the control room. Finally, the effluent is injected with chlorine to neutralize the peroxide residuals into the 1.5M Gal and 1M Gal reservoir tanks. Mr. Van noted that there were no issues with the overall treatment system, the only repair needed was in regard to the extraction wells (B5B).

San Gabriel Valley Water Company B6 – 11:50 to 1315

Mr. Luong, Mr. Chavira, Mr. Ramos, Mr. Towell, and Mr. Lo caravanned to Well B-26 which consisted of cluster wells B-26A and B-26B. The well was securely fenced off with an automatic gate driveway. Mr. Ramos noted that Well clusters B-26 and B-25 are all in operation leading to the B6 GWTP.

The participants then drove to SGVWC B6 where Mr. Van, Mr. Moreno, and Ms. Bucklin were gathered. Mr. Van and Mr. Ramos noted that this plant was manned 24 hours a day, 7 days a week, as part of the existing requirement. Two driveway entrances were observed on the southern portion of the GWTP, and two driveway entrances observed on the plant north of Corak St. Approximately 10-12 Security cameras were observed around the property. Only one security breach was noted within the past five years, specifically a burglarized intrusion where an individual disguised as a Cal Trans worker punctured the tires of the on-site vehicles. This led to an expedited upgrade of the security system. The team mustered in the control room near the driveway entrance on Corak St., where the O&M Manuals and maintenance logs were located. Mr. Van explained the challenges the B6 GWTP faced. Mr. Van explained that the GWTP has a target flowrate of 6,500 gpm but has been achieving a flow rate of 6,000 gpm for the past month or two. Mr. Van stressed that the biggest challenges for this GWTP were the four air stripping towers and their associated heater components. Air Strippers #3 and #4 have been fully calcified resulting in the restriction of air flow. The packing in the two air strippers would need to be replaced, however, even if the packing were to be replaced, the two towers would still be unable to treat to non-detect themselves. As a result, the GWTP and stakeholders are looking at alternatives. Mr. Van further explained that the heater components for the air strippers were another large component to the challenges the GWTP faced, which they are also working to get addressed as part of the alternatives.

Mr. Van then walked Mr. Luong and Ms. Bucklin throughout the entire treatment processes. The treatment process consisted of four air stripping towers with a heater and GAC unit per tower, followed by filtration by four 10-micron filter vessels, leading across Corak St. to the six pairs of IX vessels in lead and lag configuration to treat perchlorate. The common effluent would lead to a strainer for any residual resin followed by a split stream to 3 parallel IX regenerative resin units. The effluent is then blended back where half of the flow goes to the UV flex system, which is not currently in operation due to permitting, and the other half directly to the classic UV system. The GWTP plans to install the second UV flex system sometime by the end of 2023. After UV treatment, the effluent is boosted into the 1M Gal tank where sodium hypochlorite and orthopolyphosphate is injected just prior.

La Puente Valley County Water District – 14:00 to 1515

Mr. Luong, Mr. Chavira, Mr. Towell, Ms. Bucklin, and Mr. Lo met with LPVCWD representatives Mr. Zampiello, Mr. Ortiz, and Mr. Loera. One driveway entrance was observed on Puente Ave and the GWTP was secured by a fence surrounding the perimeter. When asked about security concerns, Mr. Ortiz and Mr. Zampiello mentioned that trespassing by transients was a minor concern as the plant is located adjacent to the river wash. Mr. Ortiz noted that they had a motion camera alarm system, and the building facilities are all securely locked, some with padlocks. Mr. Zampiello noted that the GWTP has plans in the future to upgrade to a more modern security system, but remote access to the SCADA controls is possible through their system. Mr. Zampiello also noted that they have do have at least one operator that visits the plant 7 days a week.

The participants then walked to the control room where the Mr. Luong asked the LPVCWD representatives a series of general questions relating to potential challenges, emergency plans and the overall resiliency relating to plant operations. Mr. Ortiz and Mr. Zampiello noted that the Environmental Response Plan (ERP) was last updated in 2021 included plans in the event of a natural disaster emergency. In light of COVID-19, Mr. Ortiz and Mr. Zampiello stated there have been some cases where staff self-isolates but nothing of major concern. Additionally, Mr. Zampiello stated they have a good rapport with their suppliers and have not had any supply chain issues. In the event water levels continue to decline, the LPVCWD representatives stated they had no concerns as the pumps are set but would retool the pumps if necessary as they have the capacity to go further down. Mr. Ortiz and Mr. Zampiello noted there were no periods of significant downtime for the GWTP. Mr. Ortiz and Mr. Zampiello stated that their target flow rate of 2,500 GPM was generally met, which exceeds their minimum requirement of 2,250 gpm.

Mr. Ortiz and Mr. Zampiello then walked the participants throughout the treatment processes explaining that wells #2 and #5 were active while well #3, secured in a housing unit, was on stand-by. The treatment starts with the two air stripping towers and their two 7,000 lb carbon vessels for VOCs. A sound wall was observed surrounding Air Stripper #2 to suppress the blower noise for the surrounding residential properties. The effluent is gravity fed to the wet well, then pumped into pre filter vessels, and into two pairs of single pass IX vessels in lead and lag configuration. The effluent is then injected with peroxide prior to UV treatment by two classic Trojan 3000 UV systems. After UV treatment, the effluent is gravity fed to a wet well, and then sodium hydroxide and sodium hypochlorite is injected into the line, prior to being pumped to the distribution main.

Valley County Water District – 15:30 to 17:00

Mr. Luong, Mr. Chavira, Mr. Towell, and Mr. Lo met with VCWD representatives Ms. Robinson, Mr. Vazquez, Mr. Adams, and Mr. Moss. Two driveway entrances were observed on Lante Ave and the GWTP was secured by a fence. Inside the control room, the GWTP is manned 7 days a week during working hours and has 16 security cameras around the GWTP. Ms. Robinson noted that the computers with the SCADA systems are separate and do not have internet connections. Immediately adjacent to the control room was the doorway to the ISEP system that contained the on-site plans (O&M manual, maintenance logs, and emergency plans).

Mr. Luong then asked the VCWD representatives a series of general questions relating to potential challenges, emergency plans and the overall resiliency relating to plant operations. Ms. Robinson stated that the Environmental Response Plan was updated annually, which Mr. Luong confirmed with the physical 2022 copy. Ms. Robinson then noted that the target flow rate of the extraction wells is 6,000 gpm, which they have been unable to meet due to ongoing concerns with the plant's aging infrastructure. The GWTP currently runs at around 4,500 gpm from wells 1-4 and 1-1. Well 1-3 is offline and well 1-2 is inactive. In light of COVID-19, Ms. Robinson stated that there have been no operational issues from COVID-19, however, the GWTP had to shut down two times due to the lack of salt for regeneration in the ISEP system. Ms. Robinson and Mr. Moss stated that the ISEP system, a continuous Ion Exchange system to treat nitrate, was the biggest challenge the GWTP faced due to the intensive maintenance

required. Mr. Moss added that the GWTP runs through about 75 tons of salt per week for brining purposes.

The participants then toured the GWTP starting at the influent of the four air stripper towers, only towers #1, #2, and #3 were in operation. Ms. Robinson added that the air strippers have issues with calcification and have to be maintained routinely to remove the built-up calcium. The participants then walked to well #1-4, where Mr. Moss explained that they had the control system upgraded, and that this well operates at 3,300 gpm at the moment. The participants toured the IX treatment system for perchlorate treatment where 6 sets of vessels were observed in lead and lag configuration. Following the IX treatment, ten 20,000 lb carbon vessels (using coconut carbon) for treatment of 1, 2, 3 TCP was observed. The participants then walked over to the ISEP treatment where two systems containing 30 vessels (23 treatment and 7 regenerative) were located. VCWD representatives noted that only one of the ISEP systems were in operation as the GWTP was running 4,500 gpm. Finally, the participants walked through the UV treatment process where 4 reactors were located, before being injected with chlorine disinfection for distribution to suburban water supply.

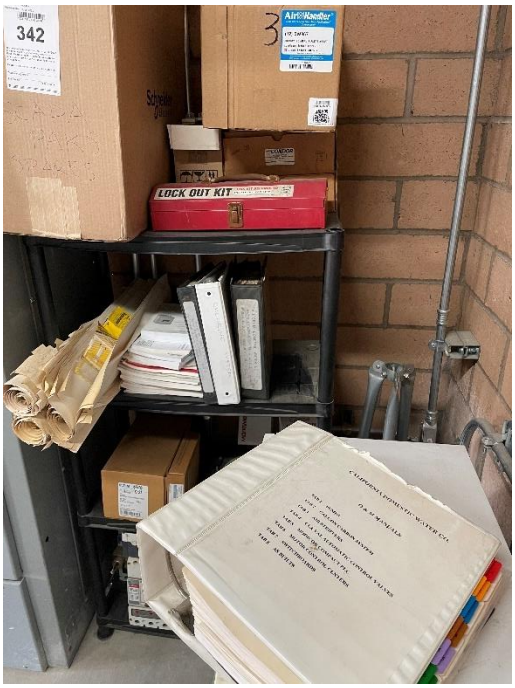


Figure 8 – O&M Manuals, as-builts in the control room.

Figure 9 – Four pumps in the pump station, three in operation, and one in rest.

Figure 10 – Facing northwest within the secondary fence, three air stripping towers with carbon vessels alongside

Figure 11 – Facing north, effluent piping from Air Stripper #3 and two carbon vessels in the back

Figure 12 – Facing northwest, IX treatment vessels

Figure 13 – Graffiti observed on the east side of the UV treatment building.

Figure 14 – Trojan UV PHOX treatment system (post IX)

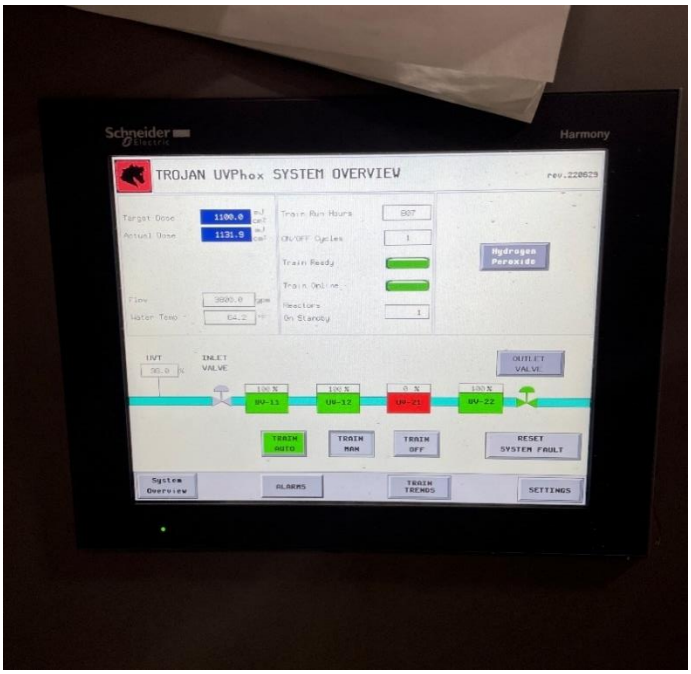


Figure 15 – Trojan UV Phox System Over display

Figure 16 – Control room and SCADA controls with maintenance logs and O&M manuals

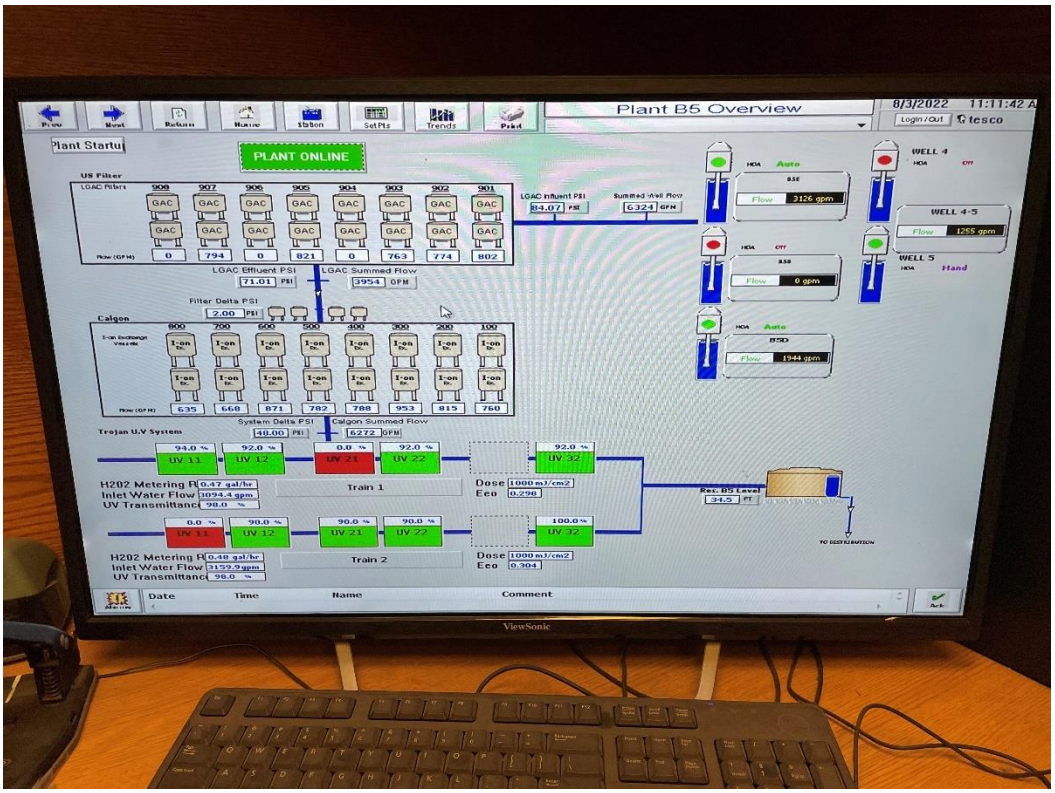


Figure 17 – Close up view of B5 SCADA overview

Figure 18 – B5E well on-site south of the control room building

Figure 19 – Well B5B (not in operation)

Figure 20 – Lead and Lag LGAC vessels

Figure 21 – Facing west, 10-micron filters in front of 8 pairs of IX vessels

Figure 22 – Trojan UV treatment system for 1,4 dioxane

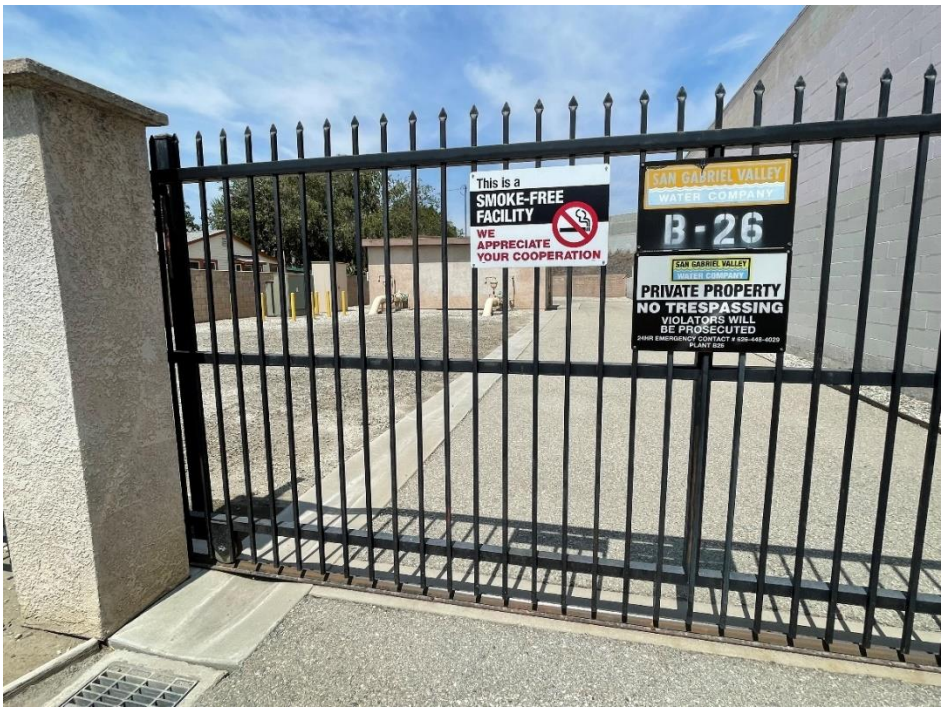


Figure 23 – B26A and B26B cluster wells secured by an automatic gate

Figure 24 – Operator control room for LP

Figure 25 – Facing northwest, rear view of the four air stripping towers and associated carbon units

Figure 26 - Facing south, street view of air stripping towers

Figure 27 – 6 pairs of vessels in lead and lag configuration for IX treatment

Figure 28 – Split Stream to 3 IX regenerative resin vessels in parallel

Figure 29 – Newly installed UV flex system (not in operation)

Figure 30 – SCADA system in the control room

Figure 31 – New Nitrate treatment system by Evoqua (in the process of installation)

Figure 32 – Well 3, not in operation and on stand-by

Figure 33 – Sound wall surrounding Air Stripping Tower #2

Figure 34 – Single pass IX resin vessels in lead and lag configuration

Figure 35 – New housing unit built in 2019 surrounding Well #5

Figure 36 – Well #5, formerly submersible and now above ground

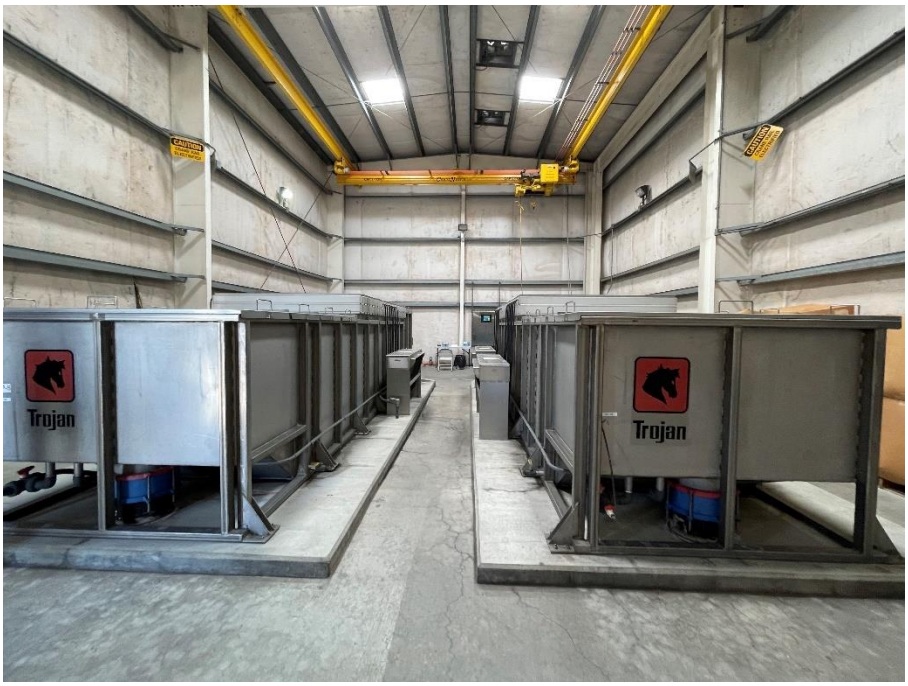


Figure 37 – Classic Trojan UV treatment system

Figure 38 – Flow Totalizer leaving UV system

Figure 39 – Inside the housing unit of Well #2

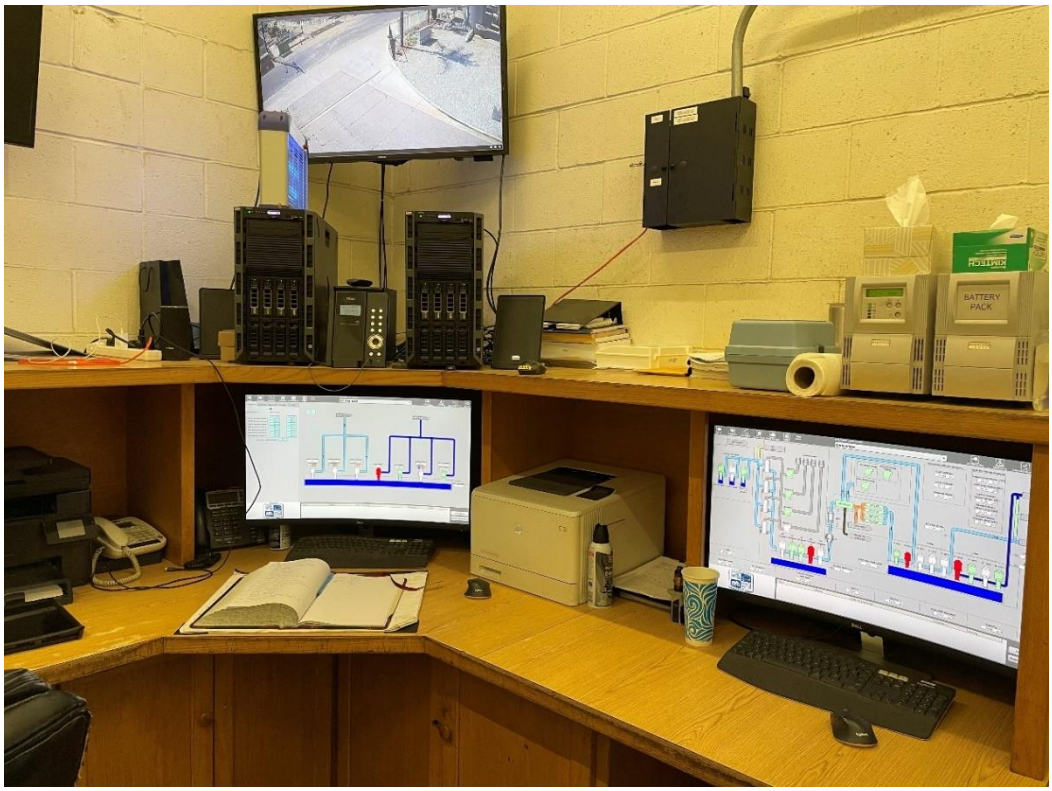


Figure 40 – SCADA system in control room

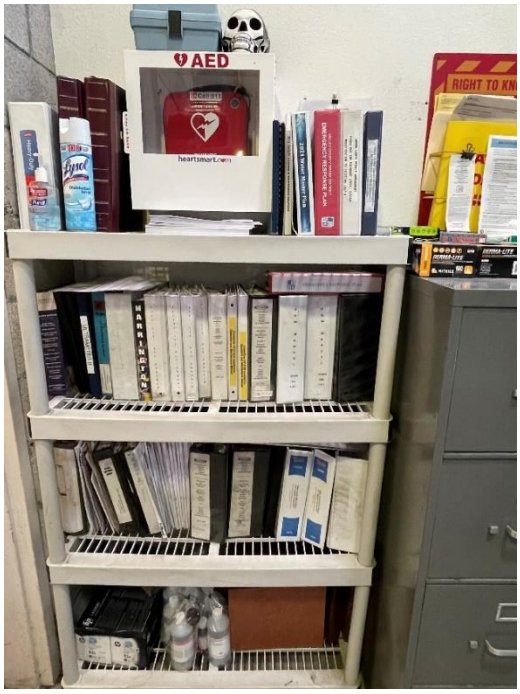


Figure 41 – O&M Manual, maintenance logs, and safety plans located in the room adjacent to the control room

Figure 42 – Four air stripper towers

Figure 43 - Six pairs of IX vessels for perchlorate treatment

Figure 44 – Inside the housing unit for Well 1-4

Figure 45 – LPGAC system

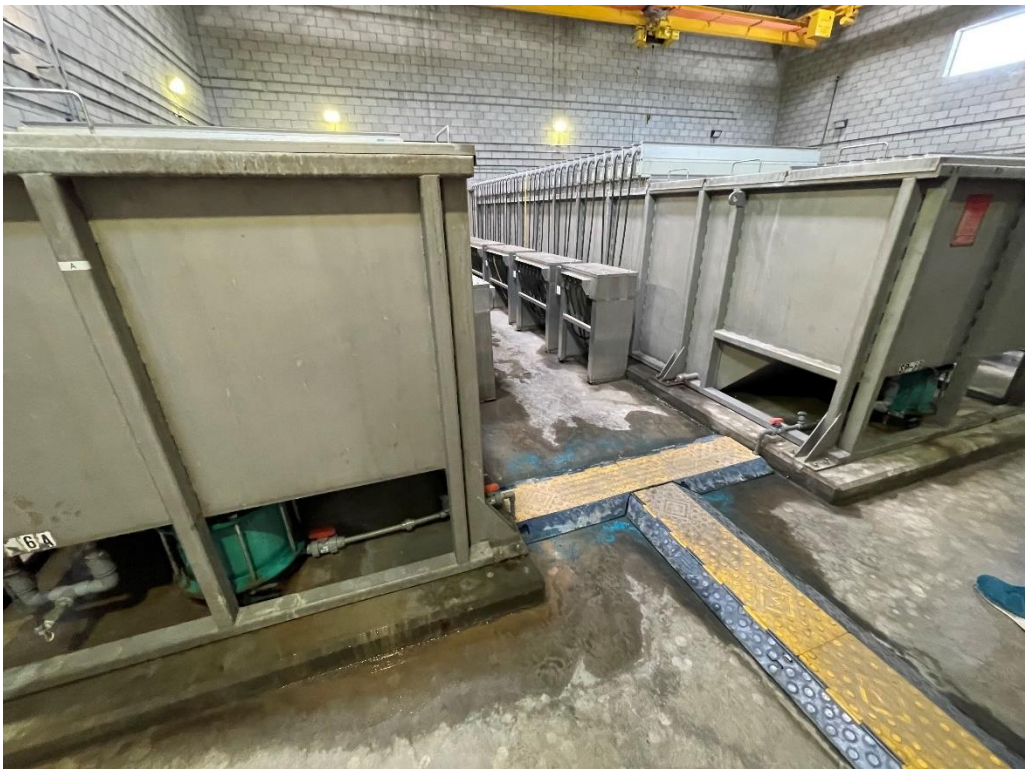


Figure 46 – Observation of leaking material associated with the UV treatment

Figure 47 – ISEP system, only one in operation for nitrate treatment